

Request for Applications Genomics Technology Platforms: Operations Support and Technology Development Funds

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1. Overview

Genome Canada funds and manages large-scale, milestone-driven genomics¹ research projects in the areas of agriculture, energy, environment, fisheries, forestry, health, and mining. Genome Canada's mission also includes a commitment to provide researchers across Canada access to leading edge genomic technologies, whether their projects are funded by Genome Canada or other organizations. Genome Canada fulfils this part of its mandate by supporting a number of genomics technology platforms across Canada.

Each technology platform provides researchers access to high throughput genomic technologies such as DNA sequencing, RNA expression, protein identification and quantitation, and metabolomics, as well as new method and protocol development, data analysis and bioinformatics. Each platform also assists researchers in the development of research proposals by providing advice on appropriate technologies, study design, data analysis and bioinformatics that enables and improves the quality of the research. The platforms also develop new and improved genomic technologies ensuring that the services they provide are able to support cutting edge genomics research.

This funding opportunity has the following two components;

- i. **Operations**: Each platform must provide access to leading edge genomic technologies to researchers across Canada. This funding opportunity will allow technology platforms to request funds to support activities related to operations of the platform. Such activities may include, but are not limited to, staff salaries, consumables or equipment deemed necessary for efficient operations of the platform.
- ii. **Technology Development**: This funding opportunity will also enable the platforms to develop new and improved technologies to ensure that the platforms remain at the forefront in providing access to leading edge genomics technologies to the research community. In this context, the term **Technology** denotes **tools and methodologies that enable research**, whereas **Technology Development** is defined as **the development of**

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. For purposes of describing Genome Canada's mandate it also includes related disciplines such as bioinformatics, epigenomics, metabolomics, metagenomics, proteomics and transcriptomics.

new technologies or the improvement of currently existing technologies including the adaptation of current technologies used in other disciplines and applying them to improving services provided by genomics technology platforms.

2. Objectives

This funding opportunity has two main objectives:

- i. To select technology platforms that will provide Canadian researchers access to leading edge genomic technologies and methods.
- ii. To enable the selected platforms to develop new technologies and/or improve existing technologies that will improve services provided by the platform and will ensure that they remain at the forefront in providing access to leading edge genomics technologies and methods.

3. Funds Available, Term and Co-funding

This is an open competition and applicants are to submit a request for both operations support and technology development for a term of five years. There is a maximum total envelope of \$15 million per year available from Genome Canada. The last two years of funding are subject to the successful outcome of an interim review for each platform and Genome Canada securing additional funding. The maximum available funds from Genome Canada for each successful platform will be \$2 million per year over five years. At least 50% of the funds requested and awarded must be for operations support on an annual basis. In addition, applicants will be required to demonstrate that financing from co-funders of an amount at least equal to the amount requested from Genome Canada is also available to the platform. For further details on co-funding, please refer to the [Guidelines for Funding Research Projects](#) and Appendix C.

Technology development and innovation are essential to the successful delivery of services by technology platforms. It is expected that the deliverables from the first two years of the technology development component of the proposal will be realized and implemented on a fee-for-service basis to users of the platform within 2.5 years after the start of platform funding (allowing for review of progress at time of interim review). Due to the rapid pace of genomics technology development, applicants may request changes to the technology development plan at the time of interim review.

4. Application and Evaluation Process

Applicants are required to apply for funding through their regional Genome Centre. The application process is comprised of two steps: Registration and Full Application.

4.1. Eligibility

To be eligible, each potential technology platform must fulfill all of the following criteria:

1. The platform must provide access to leading edge genomic technologies on a fee-for-service basis and show demand for services based on past, current and potential future projects.
2. The platform must be accessible to Canadian researchers from universities, federal and provincial governments, hospitals, not-for-profit and other public and private sector organizations across Canada, including researchers not associated with the platform's host institution.
3. The lead applicant(s) must be affiliated with an eligible research institution.
4. The platform must demonstrate that an amount at least equal to the amount requested from Genome Canada will be secured through co-funding from other sources. Such co-funding must be scheduled to be expended at the platform during the period for which Genome Canada funds are provided, i.e., April 1, 2017 to March 31, 2022. In cases where such co-funding is associated with technology development, the co-funding must be allocated specifically for the proposed technology development project.
5. Any one facility (as determined by history of users, sharing of instruments, physical location, management of operations and finances, governance structure, or other factors) may submit one application. In cases where multiple omic services are provided within a single facility, applicants will be allowed to submit only one application that may include requests for funding for the provision of multiple omic services and/or technology development projects.
6. Any proposed technology development activities must be primarily conducted within the platform where the services offered will benefit from the results.

4.2. Registration

A Registration form will be used to provide brief information about the proposal which will be used to evaluate eligibility of all potential applications by the Genome Centres and Genome Canada. Only those Registrations that satisfy the eligibility criteria will be invited to submit a full application.

The Registration process will also provide guidance to Genome Canada in the selection of reviewers for the peer review process for full applications. 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.

4.3. Full Application

All submissions will be assessed by an international panel of experts through a rigorous review process. Each proposal will be assessed against the review criteria as outlined below and provided in detail in Appendix B.

The primary criteria for any genomics technology platform to receive **operations support** funding from Genome Canada are:

1. Demand for services based on past, current and potential future projects funded by Canadian public and private sector organizations and made available on a fee-for-service basis.
2. Technical ability to deliver services, including whether services are provided in a competitive manner, i.e., in a timely manner, at reasonable cost and at a consistently high quality.
3. Demonstration of sufficient capacity, including infrastructure, and plans for updating capacity, as required.
4. Management and financial criteria.

The primary criteria for a platform to receive **technology development** funding from Genome Canada are:

1. The quality of the applied research proposal and whether it will lead to more efficient and/or effective services for users of the platform.
2. The technical ability of the team to carry out the applied research and implement the results on a fee-for-service basis to users of the platform.
3. Management and financial criteria.

The reviewers will also be asked to provide an overall score based on the overall merit of the request for funding.

A two stage process will be used for the review of all proposals. The first stage will involve an initial review done by a College of Reviewers with relevant expertise. This stage is intended to streamline the number of applications such that only a reasonable number of the most competitive applications are reviewed further by an International Review Committee (IRC). The second stage will involve review of the most competitive applications by the IRC. This Committee will discuss the applications at an in-person meeting including an interview of the applicants via videoconference.

The IRC will provide their recommendations and advice to Genome Canada on all aspects of the applications, including proposed budgets. The Board of Directors of Genome Canada will make the final funding decisions. Only those proposals demonstrating the highest degree of overall excellence will be funded. Subsequently, applicants will be provided with a written evaluation of the strengths and weaknesses of their application and the Board decision through a funding decision letter and summary of review. All platforms approved for funding 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 the evaluation process where warranted by factors such as the number of applications or the complexity of the proposals. Any adjustments will be rapidly communicated through Genome Canada's website and through the Genome Centres.

5. Guidelines for Funding

Genome Canada's [*Guidelines for Funding Research Projects*](#) must be adhered to throughout the application and post-award management processes. Certain exceptions and modifications to the general guidelines apply for the funding of technology platforms. Please see Appendix C for details.

6. Annual Leaders' Meeting

It is expected that the Technology Platform Leaders will meet annually at a meeting organized by Genome Canada.

7. Competition Timeline

Requests for support of projects must be submitted to Genome Canada through Génome Québec. The competition timeline outlined below includes both Genome Canada and Génome Québec deadlines. Please contact Génome Québec for further information on their process and internal deadline dates.

<u>Date</u>	<u>Activity</u>
July 20, 2016	Launch of Competition and release of Guidelines
Sept 2, 2016	Deadline for Registrations at Génome Québec
Sept 8, 2016	Deadline for eligible registrations at Genome Canada
Sept 22, 2016	Deadline for Full Applications at Génome Québec
Nov 10, 2016	Deadline for Full Applications at Genome Canada
Late Nov, 2016	All applicants notified regarding dates for <u>potential</u> interview with the International Review Committee
Mid Jan, 2016	Shortlisted applicants notified regarding interviews with the International Review Committee
Mid-Feb, 2016	International Review Committee meeting, including videoconference interviews with shortlisted applicants
Mid-March, 2016	Decisions by Genome Canada
Late March, 2016	Notification of Decision

APPENDIX A – CONTACTS

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APPENDIX B - EVALUATION CRITERIA

The applications will be evaluated through an independent peer review process against the criteria below. Note that these descriptors are not all-inclusive.

1. Operations Support

A. Demand for Services

All funded platforms are expected to be accessible by research projects funded by universities, federal and provincial governments, hospitals, not-for-profit and other Canadian public and private sector organizations. They must demonstrate demand for the services offered on a fee-for-service model based on past, current and potential future requests for such services.

B. Technical Ability to Deliver Services

1. Quality of Services

- i. The technical ability to provide each of the technologies offered.
- ii. The ability to provide advice in study design and data analysis.
- iii. The likelihood that services will be delivered in a competitive manner, i.e., with consistently high quality, in a timely manner and at reasonable costs (as compared to norms based on similar academic and private sector service providers).
- iv. Evidence of past cost savings as well as a plan to reduce current costs over time.

2. Quality of Team

- i. The appropriateness of the applicants' expertise to operate the technology platform.
- ii. The quality of the applicants' recent productivity, track records and their contributions to the fields of genomics, proteomics, metabolomics, bioinformatics or related areas.
- iii. Evidence that the team is forward looking and innovative.

C. Demonstration of Sufficient Infrastructure Capacity

1. Applicants must demonstrate that the host institution is providing a supportive environment and that there will be sufficient infrastructure capacity to provide services in a timely and effective manner.
2. Applicants must also provide a list of all equipment that will be accessible to researchers without restrictions. For equipment that will be partially available, details of all access restrictions should be provided.

D. Management and Finance

1. The quality of the management plan, and the administrative/organizational structure

- i. The composition of the proposed management team, recruitment plan, role of key personnel and committees, frequency of meetings, etc.
- ii. The appropriateness of management team member accountabilities.
- iii. The mechanism of communicating within the platform, and with other key stakeholders e.g., users and the regional Genome Centre(s).
- iv. The management team's ability to coordinate activities.
- v. The mechanism of managing projects, assigning resources and setting priorities
- vi. The method for making research results accessible to users, including data management.
- vii. The ability to manage a multi-disciplinary team.

2. The mechanism for making critical decisions regarding day-to-day operations

- i. The manner in which important decisions will be made.
- ii. The process for making strategic decisions when a consensus cannot be reached.
- iii. The discussion of key challenges and plans to address them.

3. The effectiveness of the proposed communications, outreach and knowledge dissemination strategy

- i. The effectiveness of promotional activities (e.g., advertising, website creation, business development).

4. Highly Qualified Personnel (HQP)

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

5. Budget and Expenditure Controls

- i. The budgeted costs meet the definition of *Eligible Costs* (as described in the [Guidelines for Funding Research Projects](#) and Appendix C).
- ii. The reasonableness of the budgeted costs.
- iii. The reasonableness of the rationale and justifications used for budgeted items necessary for core operations.
- iv. The likely effectiveness of financial and budgetary control processes or mechanisms (e.g., processes for authorizing purchases, payments and budget adjustments).
- v. Level of assurance provided by the proposal that expenditures will be closely and critically monitored.

6. Financing from Co-Funders

- i. Evidence that additional financing through co-funding from sources other than Genome Canada is available to the platform at an amount at least equal to the amount requested from Genome Canada.
- ii. The eligibility of the proposed co-funding (as described in the [Guidelines for Funding Research Projects](#) and *Appendix C*).
- iii. The likelihood that the platform will be able to secure the required co-funding at the time of the release of funds.

2. Technology Development Support

A. Proposal

1. Context

- i. The extent to which the proposed technology development applied research activities will lead to more efficient and/or effective technologies for users of the platform.
- ii. The extent to which the proposed activities reflects creative and original thinking.
- iii. The extent to which the proposed activities lead, extend and/or complement national and international work in this area.

2. Plans

- i. The appropriateness of the methods and approaches proposed (including handling of data and resources) in terms of the objectives.
- ii. The feasibility of the applied research based on the proposed resources and timelines.
- iii. The probability that the deliverables from the first two years of technology development activities will be realized and implemented on a fee-for-service basis to users of the platform within 2.5 years after the start of platform funding (allowing for review of progress at time of interim review).

B. Technical Ability

1. Quality of the Team

- i. The appropriateness of the applicants' expertise.
- ii. The quality of the applicants' recent productivity and track records in the area of technology development.
- iii. Evidence that the team is forward looking and innovative.
- iv. The likelihood that the team will be able to deliver the goals of the proposed technology development activities.

C. Management and Finance

1. Management Plans and Expertise

- i. The extent to which the management plan covers project management, accountabilities of personnel, and processes for decision-making on research direction and strategy for realizing deliverables.
- ii. The appropriateness of management team member accountabilities.

2. Budget and Expenditure Controls

- vi. The budgeted costs meet the definition of Eligible Costs (as described in the [Guidelines for Funding Research Projects](#) and Appendix C).
- vii. The reasonableness of the budgeted costs.
- viii. The reasonableness of the rationale and justifications used for budgeted items.
- ix. The likely effectiveness of financial and budgetary control processes or mechanisms (e.g., processes for authorizing purchases, payments and budget adjustments).
- x. Level of assurance provided by the proposal that expenditures will be closely and critically monitored.

3. Financing from Co-Funders

- iv. Evidence that additional financing through co-funding from sources other than Genome Canada is available for the proposed activities at an amount at least equal to the amount requested from Genome Canada.
- v. The eligibility of the proposed co-funding (as described in the [Guidelines for Funding Research Projects](#) and Appendix C).
- vi. The likelihood that the platform will be able to secure the required amount of co-funding at the time of the release of funds.

APPENDIX C: EXCEPTIONS AND MODIFICATIONS TO THE *GUIDELINES FOR FUNDING RESEARCH PROJECTS*

As mentioned in Section 5 above, Genome Canada's [Guidelines for Funding Research Projects](#) must be adhered to throughout the application and post-award management processes. Certain exceptions to the general guidelines apply for the funding of technology platforms, as noted below.

1. Eligible Costs for Genome Canada Funding

Genome Canada will fund eligible costs for approved activities related to providing services to research projects funded by Canadian public and private sector organizations.

Eligible costs are defined as reasonable costs for activities **directly related** to:

- 1) helping sustain the essential services provided to the genomics research community including value-added advice on appropriate technologies, study design, data acquisition and analysis; and,
- 2) technology development.

Equipment:

- Funds requested for equipment from Genome Canada must not exceed the lesser of ten percent (10%) of the total requested funds or a maximum of \$1,000,000 over the funding period.

Consumables:

- Materials and supplies for services must be covered by cost recovery from projects.
- Items such as equipment maintenance contracts, general maintenance of platform infrastructure and travel directly related to the conduct of technology development activities that are part of the application are eligible.

General and Administrative Costs

- Administrative costs may include, for example, travel for platform team members related to the management of the platform (e.g., platform team meetings) costs associated with publications, communications and public outreach activities, website maintenance, office expenses and final reports.

2. Financing from Co-Funding

Genome Canada requires at least an amount equal to the funding requested from Genome Canada be obtained through funding from other sources. Any eligible co-funding must be scheduled to be expended at the platform during the period for which Genome Canada funds are provided, i.e., April 1, 2017 to March 31, 2022. The co-funding must be used for the eligible co-funding costs and derived from the eligible sources defined below. Before the time of release of funds, 75% of the eligible co-funding required for the first three years of the funds requested

from Genome Canada must be secured (received or committed), and a well-developed and feasible plan for securing the remaining 25% of co-funding must be provided.

3. Eligible Costs for Co-Funding

Eligible costs for co-funding are defined as reasonable costs for activities **directly related** to:

- 1) help sustain the services provided to the genomics research community including value-added advice on appropriate technologies, study design, data acquisition and analysis; and,
- 2) technology development.

Revenue derived from cost-recoverable expenses charged to the users of the technology services (fee-for-service) is allowed as co-funding, except for revenue from Genome Canada funded projects.

NOTE: For revenue derived from fee-for-service, the documentation to support the co-funding must be based on finalized statements of work (SOWs). If the application is funded, signed SOWs confirming such work must be provided to Genome Canada before the time of release of funds. Evidence of actual fee-for-service revenues will be required as part of the quarterly financial reporting to confirm the level of co-funding. As with other co-funding sources, the actual results of fee-for-service revenues received will be monitored on a quarterly basis in accordance with the reporting requirements of the Centres.

4. Eligible Co-Funding Sources

With regards to the following organizations which are normally ineligible as sources of co-funding, with the objective of encouraging the platforms to attract research projects with funding from these sources, thereby providing them access to the best of leading edge technologies, funds obtained from these sources indirectly through cost-recovery of expenses (i.e., fee-for-service) are eligible. The organizations are as follows:

- Canadian Institutes of Health Research (CIHR)
- Natural Sciences and Engineering Research Council (NSERC)
- Social Sciences and Humanities Research Council (SSHRC)
- Canada Research Chairs (CRC)
- Networks of Centres of Excellence (NCEs)
- Canada First Research Excellence Fund

5. Integrated GE³LS

An integrated GE³LS component is not required.

6. Monitoring, Oversight and Interim Review

Regular monitoring and oversight of Genome Canada funding for each platform will be organized and led by the Administrative Genome Centre, as appropriate. This may include advice from

external experts, but does not necessarily include an Oversight Committee (as described in the [Guidelines for Funding Research Projects](#)).

Genome Canada will be organizing an interim review by international experts during the third year of funding. The last two years of funding for each platform are subject to the successful outcome of this interim review.

Genome Canada will also consult external technology platform experts as required as part of its normal consultations on program design, delivery and evaluation.

7. Annual Reporting

Each platform will be required to submit to its Genome Centre annual reports that include a description of services delivered by the platform to all users. The Annual Report for the platforms should include, but is not limited to, the following:

- Number and types of users (Genome Canada-funded, non-Genome Canada-funded, Canadian academic or industry, foreign academic or industry).
- The quantity and dollar value of each service provided to each type of user.
- Publications;
 - Those arising directly from work performed entirely by the platform, i.e., not as part of a service to another group or project.
 - Those arising from collaboration or through service provided to Canadian public and private sector organizations. These may be as co-authors or acknowledgments.
 - Those arising from collaboration or through service provided to all international public and private sector organizations. These may be as co-authors or acknowledgments.
- Progress in advancing new and existing technologies.
- Efforts to reduce costs.
- Significant hires or changes in personnel.
- New grants, awards or other noteworthy sources of income.

Please note that this is not an exclusive list and Genome Canada may ask for other metrics to be collected to help document the impact of services provided by the platforms to the wider research community. The complete reporting requirements will be transmitted from Genome Canada to the platform through the Genome Centres.

8. Cost Savings and Pricing of Services

The platforms must identify cost savings and these must be translated into lower pricing of services to users. Reporting of lower prices must be made to the designated regional Genome Centre on a regular basis but no later than once every twelve months.

Should any additional requirements or restrictions be placed on new funds received for this competition, Genome Canada will ensure that the agreements between Genome Canada and the Genome Centres reflect these conditions and that the guidelines for this competition are modified, where necessary, to allow compliance with them.