Genomics Integration Program

Human Health

Request for Applications

March 2024

GenomeQuébec

GenomeQuébec

TABLE OF CONTENTS

1. GÉNOME QUÉBEC MISSION AND OBJECTIVES

Génome Québec's mission is to catalyze the development and excellence of genomics research, its integration, and democratization. As a cornerstone of Quebec's bioeconomy, the organization also contributes to social and sustainable development, as well as the promotion of Quebec.

In order to advance research excellence in genomics, Génome Québec funds large-scale projects in priority sectors within Quebec. These strategic investments aim to create a significant impact, maximizing socio-economic benefits and positioning Quebec as a leader in the field of life sciences.

Objectives:
One of the key elements of Génome Québec's strategy is to support genomics research. This translates into ensuring the development of excellence in genomic research, among other things, by stimulating partnerships with users in order to:

i. Promote genomic research as a lever for economic development in Quebec;
ii. Support the development of genomics in strategic sectors for Quebec;
iii. Optimize the success rate of Quebec in Genome Canada competitions;
iv. Ensure the emergence of new research teams in genomics;
v. Ensure the adoption of research results by users;
vi. Increase the contribution of external partners (public, private and international);
vii. Develop emerging sectors with high potential.

2. OVERVIEW

Genomics is a transformative technology with the potential to revolutionize lives and offers solutions with substantial economic impact. With an investment exceeding one billion dollars invested over the past 24 years through Génome Québec, Quebec has cultivated a critical mass of competitive expertise, positioning itself to harness genomics as a catalyst for positive change in the field of life science.

Monitoring the international landscape reveals a trend where many countries are adopting national strategies to integrate genomic medicine into their healthcare systems. Genomic medicine is reshaping the healthcare journey by providing quicker and more precise diagnoses, safer prognosis, and more effective and personalized therapies. Genomics stands as a unique asset, propelling innovation in health and improving overall quality of life.

Within organizations, genomics serves as a catalyst for scientific and technological innovation, industrial valorization, and economic growth. Its applications lead to substantial cost savings for the healthcare system, including the reduction of inappropriate, inaccurate, and costly tests, shortened analysis times, and the elimination or restriction of unnecessary medications. For healthcare professionals and biotechnology companies, genomics accelerates the development of new companion tests and the design of more targeted therapies, accompanied by enhanced pharmacovigilance.

3. THE GENOMICS INTEGRATION PROGRAM

In this context, Génome Québec is facilitating the success of this revolution by promoting the adoption of genomics within user communities through the ***Genomics Integration*** *(GI)* **Program**. The program offers grants ranging from $50,000 to $200,000 per project covering 50% of the funding for collaborations between researchers in Quebec and users capable of implementing or commercializing the research results.

The funds are intended for establishing a **proof of concept** that could secure subsequent funding, or for implementing the results of the **proof of concept** by the user partner at the end of the project. Projects must be related to human health and encompass aspects derived from omics technologies. Examples include the development of new omic technologies, the utilization of genomics data by artificial intelligence, genetic engineering, synthetic biology, and the validation of therapeutic targets or biomarkers identified through genomics, etc.

The main objectives of the program include:

- The development of applied genomics technologies;
- Encouraging and facilitating collaborations between user communities and academia in applied genomics research;
- Stimulating an increase in R&D activities in Quebec;
- Preparing and training the next generation of scientists to meet human resources needs in academic, industrial, government, clinical and financial sectors;
- Promoting employment and economic growth in Quebec by creating attractive and stimulating positions in Quebec for researchers educated and trained in our academic institutions;
- Improving communication between senior management of private corporations and the academic research environment;
- Encouraging the implementation of omics research programs in very young companies, academic research centres, SMEs and larger companies;
- Promoting the transfer of technology and knowledge from research to practical applications with significant impacts in the field of health;
- Advocating for the use of tools derived from omics technologies in the Quebec healthcare system.

3.1. Eligibility

To be eligible, projects must meet the following criteria:

i. The teams must be composed of at least:
   a. One researcher responsible for the intellectual direction of the project, affiliated with a public research institution in Quebec (university, college, or an institution with an explicit research mandate). The researcher can only submit one application per program cycle as the academic project leader;
   b. One non-academic partner (User) who intends to put the resulting innovation into practice within the internal activities of their organization, to commercialize it, or, by other means, make it available to its ultimate users. Eligible users include companies (private, public, Canadian, foreign-owned), industrial consortia, non-profit organizations, hospitals, or government departments or organizations (federal, provincial, and municipal).

ii. Projects take place in Quebec and must address a significant need for the non-academic partner.

iii. Projects must be related to human health and include an aspect derived from an omic or a multiomic science or enable its application. The term ''omics'' encompasses various disciplines such as genomics, proteomics, transcriptomics, epigenomics, nutrigenomics, pharmacogenomics, metabolomics, metagenomics, genetic engineering, synthetic biology or bioinformatics.

iv. Users must demonstrate its capacity to implement or market the project results. Users have the option of including this demonstration in a utilization, implementation, or commercialization plan. This plan may include:
   a. A business plan;
   b. Revenues related to the use, implementation or commercialization of similar products;
   c. Support from potential clients or end users;
   d. Incubation or training in life sciences commercialization;
   e. Planned or possible regulatory initiatives;
   f. Any additional information supporting the capacity for implementation or commercialization.

v. Projects must lead to social or economic benefits for Québec: job creation, economic growth in Quebec, cost savings for public institutions, impact on society, improvement in quality of life, health, etc.

vi. The funds cannot be used to finance projects aimed at new discoveries. Instead, they must be used to establish a proof of concept.

vii. The proof of concept could be used as leverage to obtain subsequent funding. If the team indicates in their application the possibility of obtaining potential funding sources, a justification of their capacity to secure the necessary funds as well as the need for the proof of concept is required.

   The proof of concept could also allow the user partner to put the results of the projects into practice. If this the case, the team must provide details on their ability to incorporate the results of the proof of concept at the end of the project.

Equity, Diversity, and Inclusion (EDI)

The research landscape in Canada is experiencing a shift in its understanding and implementation of equity, diversity, and inclusion (EDI) values. The Canadian government, funding agencies, universities, research institutes and colleges have committed to supporting and taking measures to increase EDI at the core of their communities and promote these values at every stage of the research process. At Génome Québec, we understand that the quality of genomic research and the solutions it provides is enriched and surpassed when different perspectives and expertise are brought to work together, allowing for a variety of viewpoints and ideas.

In the context of the shift towards genomic medicine, Génome Québec supports equity, diversity and including healthcare. This funding opportunity allows multidisciplinary teams to bring different voices to the table and work on EDI principles to enhance the impact of the research project, not only on the deliverables, but also on the individuals working on these solutions and on those who will implement and benefit from them. We therefore expect that teams integrate EDI values into their research plan and experimental design, as well as in the composition of their team, and the selection of users and stakeholders consulted and impacted by the project. If one or more considerations related to EDI do not apply to their research, applicants may be asked to explain why they are not relevant in their application.

We recommend that teams consult the strategic plan for EDI from the FRQ, and the NSERC guidelines on EDI, the evaluation criteria for this funding opportunity in Appendix A, as well as the EDI guiding principles of Génome Québec in Appendix B.

We also encourage applicants to watch this video clip for practical advice on minimizing the influence of biases.

3.2. Funds Available, Co-Funding and Term of Projects

Applicants may request grants ranging from $50,000 to $200,000 per project. They must secure co-funding of at least 1:1, for a total budget of $100,000 to $400,000 or more. Sources of co-funding can be the user, the academic partner or any other source other than the ministère de l'Économie, de l'Innovation et de l'Énergie (see section 4.4.1). In-kind contributions are accepted if they are provided in Québec. The duration of projects must be 6 to 24 months.

The funding provided by Génome Québec can only be disbursed to the academic partner. This funding must be used exclusively to cover the costs of activities directly supporting the objectives of the project, as outlined in the budget approved by Génome Québec, and the expenses must be incurred within the province of Quebec.

3.3. Cohorts and Available Genomic Data for Health Research

Genome Quebec would like to encourage the utilization of available genomic data within the health research community. Interested researchers are invited to reach out the CARTaGENE and the BQC19 cohorts if there is interest and relevance to the proposed research project.

CARTaGENE

CARTaGENE is a public research platform made up of both biological samples and longitudinal data on the health and lifestyle of 43,000 Quebec men and women between the ages of 40 and 69 at recruitment (https://cartagene.qc.ca/).

The recruitment was conducted in two phases (A : 2009-2010 and B : 2013-2014). Available data include health, nutrition, environmental and lifestyle information, as well as physical measurements. Biological samples were collected to generate biochemical, lipid profiles and **genomic data** (genotyping and imputation data for the full cohort, whole genome sequencing (n=2,184), transcriptomic (n=1,000), etc.). Additionally, participants data is linked to other databases (genealogy (Balsac, environmental (CANUE), etc.). Clinico-administrative data (MED-ECHO, Cancer Registry, Breast Cancer Registry, etc.) of participants, also accessible are matched with the databases and updated annually.

CARTaGENE is accessible to all researchers in the health sector, both from the public and private sectors. For more details, please contact access@cartagene.qc.ca.

Biobanque québécoise de la COVID-19 (BQC19)

The *Biobanque québécoise de la COVID-19* (BQC19) offers, via a quick and easy access process, a wide range of data derived from the analysis of samples from more than 6,000 participants, including COVID-19 patients, as well as control subjects. Among these data, genome-wide sequencing and genotyping (GWAS) of the host genome is available for more than 4,000 participants, and transcriptomic analyses are available for more than 1,000 participants. In addition, the Biobank also offers metabolomic, immunoserology, and proteomic data, as well as Roche laboratory analyses, and the participants' associated clinical data.

For more information on the data and what types of analyses are available at the BQC19, please visit the website at https://en.quebeccovidbiobank.ca/donnees-partagees.

For more information on the access process, you can visit the website at https://en.quebeccovidbiobank.ca/acceder-au-materiel-de-la-bqc19 or feel free to contact the BQC19 Access Officer, Doris Ransy, at doris.ransy@affiliate.mcgill.ca.

4. APPLICATION AND EVALUATION OF PROPOSALS

4.1. Application Process of Proposals under the GI Program

Applicants, whether from the academic or non-academic organizations, who are interested in submitting proposals under the GI Program can contact Génome Québec (see section 6 for the contact person) for any queries related to eligibility and budget preparation. Following the deadline for submitting applications, Génome Québec will determine whether the application meets the eligibility criteria described in this Request for Application and can therefore be reviewed by the independent peer review committee.

Applications must be submitted via email to Integration@genomequebec.com using the application form available on the Génome Québec website. The application deadline is **May 15, 2024, at 11:59 PM (ET).**

The evaluation will involve a single stage and will be conducted by an independent peer review committee consisting of scientific experts, and industry representatives and healthcare professionals. All committee members will sign a confidentiality agreement and disclose any conflicts of interest. The committee will evaluate each application based on the evaluation criteria outlined in Appendix A. Following the committee's decision, applicants will receive a decision notice along with a summary highlighting the strengths and weaknesses of their application.

If, at any time during the review process, it is determined that an application does not meet the general eligibility criteria outlined in Appendix A, the application will not undergo evaluation by the review committee.

Génome Québec retains the right to adjust the evaluation process if the complexity of the applications, the volume of received applications, or other factors justify it. Any modifications will be promptly communicated to the applicant teams.

4.2. Eligible Costs

Eligible costs are defined as reasonable expenses within categories that directly contribute to the objectives of the project approved by Génome Québec. A description of eligible costs is provided in the *Guidelines for Funding* of Génome Québec. The main categories of eligible costs include:

- Salaries and benefits;
- Consumables;
- Services provided by third parties[1];
- General and administrative fees[2];
- Equipment: expenses related to the purchase of small equipment, or the rental of equipment are up to a maximum of 25% of the total eligible expenses. The purchase value of each piece of equipment must be equal to or less than $25,000 before taxes.

[1] The application must include a description of all technical services that will be subcontracted. The choice of a supplier outside of Quebec must be accompanied by a justification based on factors such as availability, quality, speed, and the cost of the services provided.
[2] These fees must represent a maximum of 5% of the non-administrative expenses in the budget.

Project budgets should exclude items for which funding has already been approved by other sources, unless the funding request for these items was specifically made to support activities in the Génome Québec project and satisfies all other eligibility criteria.

Expenses funded by Génome Québec and costs covered by eligible co-funding must be incurred after the Notice of Award (NOA) to be considered as eligible costs.

4.3. Non-Eligible Costs for Génome Québec

Non-eligible for projects funded by Génome Québec are listed in the *Guidelines for Funding* of Génome Québec. Here are some examples of ineligible costs for Génome Québec:

i. The salary (or bonuses) of the academic project leader, co-project leader and, of the senior management members of the user organization;
ii. Costs related to entertainment, representations and the purchase of gifts, expenses related to regular interactions with colleagues from the institution and personnel meetings;
iii. Costs associated with staff awards and recognition;
iv. Education-related costs, such as thesis preparation, tuition and course fees;
v. Indirect costs to the project, including research overhead costs and institutional overhead costs;
vi. Costs related to the preparation of teaching materials;
vii. Costs of basic services, such as heat, lighting, water, compressed air, distilled water, vacuum pressure devices and janitorial services supplied to all laboratories in a research facility;
viii. Insurance costs for buildings and equipment;
ix. Costs associated with regulatory compliance, including ethical review, biohazard or radiation safety, environmental assessments or provincial or municipal regulations and by-laws;
x. Monthly parking fees for vehicles, unless specifically required for fieldwork;
xi. Sales taxes to which an exemption or rebate applies;
xii. Costs of laboratory relocation;
xiii. Costs related to alcoholic beverages;
xiv. Incorporation fees and legal fees related to a new or spin-off company.

4.4. Co-Funding

The complete application must include all documentation related to the co-funding. The co-funding must be at least equal to Génome Québec's contribution (minimum of 1:1). Here are examples of appropriate documentation:

i. A written confirmation, such as a letter of commitment from the co-funding source;
ii. In the case of co-funding by a funding agency, a written confirmation of the availability of funds and the notification of award (if applicable). Please note that the documentation must clearly demonstrate that the allocated funds will be used for eligible costs included in the project budget approved by Génome Québec;
iii. For in-kind contributions: a clear rationale and precise calculation of how the value was determined, including necessary documents to certify the contribution (e.g., price lists, etc.). All in-kind contributions must be auditable by external experts.

The entire co-funding must be secured at the time of application submission to proceed with the evaluation process.

4.4.1. Eligible Co-Funding Sources

Génome Québec can accept the following potential co-funding sources, which can be Canadian or foreign, as long as the expenses are incurred in Québec:

i. Institutional funds, trust funds or foundations;
ii. Private companies and industrial consortia;
iii. Departments and agencies of the federal government, including the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), Social Sciences and Humanities Research Council (SSHRC) and tri-agency programs (e.g., Networks of Centres of Excellence, and Canada Research Chairs);
iv. Departments and agencies of the provincial and municipal governments are eligible, with the exception of the ministère de l'Économie, de l'Innovation et de l'Énergie (MEIE);
v. Firms and corporations;
vi. Non-profit organizations;
vii. Individuals;
viii. Venture capital or other investment funds;
ix. Cash contributions as co-funding are preferred. However, in-kind contributions, defined as non-cash contributions that can be given a cash value, may be considered as co-funding if:
    a. The value can be reasonably determined and supported by documentation;
    b. The value of the contribution is based upon the fair market value of a tangible item and sufficient justification is provided. Supplier discounts are one example. However, institutional discounts generally offered to medical establishments or research facilities are not eligible as co-funding.

4.4.2. Non-Eligible Sources of Co-Funding

i. The value of previously existing intellectual property transferred to a project is NOT considered eligible co-funding;
ii. A co-funding not associated with proof of concept;
iii. A co-funding from a Quebec funding organization supported by the ministère de l'Économie, de l'Innovation et de l'Énergie (CQDM, FRQ, CRIBIQ, MEDTEQ, etc.).

5. ADMINISTRATION

5.1. Conditions of Release of Génome Québec Funds

The grant will be awarded by Génome Québec and must meet the requirements of Génome Québec. The following are the minimum requirements to allow for the disbursement of funds by Génome Québec:

i. The signed agreement between Génome Québec and the academic institution which establishes the resolution of major areas, such as contributions, funding terms, termination policy, financial policies, etc.
ii. The approved budget and updated objectives and milestones in accordance with the recommendations of the Génome Québec review panel;
iii. Appropriate certification for applications, if applicable, involving research with human subjects, human stem cells, animals, biohazards, radioactive materials or potential effects on the environment.

5.2. Project Readiness

All applicants must demonstrate that they will be able to fulfill all necessary conditions for releasing Génome Québec funds within three (3) months of the NOA (see section 5.1 on conditions of release of Génome Québec funds).

Génome Québec reserves the right to withdraw its funding for any approved project that is not ready to receive the funding or from any project for which signed agreements, as described in 5.1.i, have not been secured within three (3) months of the NOA.

5.3. Management of Funding

The funds from Génome Québec will be transferred to the academic institution when all conditions described in section 5.1 are met, and this will occur in two stages. The first 90% of the funds will be released upon receiving the signed agreements. The remaining 10% will be released after the submission of the final reports and holding a strategic closing meeting within three (3) months following the project completion.

The final reports must minimally describe the project's achievements. They must include a final financial report, utilizing a template provided by Génome Québec, which reconciles actual expenses with budgeted amounts, evidence of the co-funding received for the project, and the current status of any tangible outcomes developed as a result of Génome Québec funding.

The strategic closing meeting will take the form of a virtual discussion with representatives from Génome Québec, aiming to guide the teams in transitioning from a proof of concept towards development and commercialization or implementation.

5.4. Accountability and Reporting

Génome Québec must meet the evaluation, auditing, responsibility and accountability requirements stipulated by the Ministère de l'Économie, de l'Innovation et de l'Énergie, including the necessary information that allows Génome Québec to evaluate the ongoing performance of projects and their related activities. It is the responsibility of funded researchers to participate in this process and provide the necessary information on the project's performance and progress as required by Génome Québec.

As part of its responsibilities, Génome Québec will implement mechanisms to evaluate, on an ongoing basis, the performance and productivity of funded projects in order to determine whether funding must be continued, reduced, suspended or withdrawn. These mechanisms include the final report and the closing strategy meeting, as well as any other form of review that is deemed necessary.

6. GÉNOME QUÉBEC CONTACT

Arnaud Cheuk, PhD (he/him)
Manager of Partnership Development, Scientific Affairs
(514) 398-0668, ext. 202
Integration@genomequebec.com

APPENDIX A – Evaluation Criteria

To ensure that the objectives of Génome Québec are met, applications are evaluated based on the importance of the need for innovation from the omic science by users; the scientific excellence, the project's potential to secure subsequent funding through the proof of concept; commercialization or implementation potential of the project; and the social or economic impact for Québec. The descriptors following each criterion are not all-inclusive.

A) Broad Criteria of Eligibility

1. The project is directed towards applied genomics or related research areas (proteomics, metabolomics, bioinformatics, genetic engineering, synthetic biology, etc.);
2. The project has the potential to have a significant impact on human health and generate social and/or economic benefits;
3. The presence of a user and an academic partner as principal collaborators and degree of involvement of both partners;
4. The project is carried out in Quebec.

B) Need for Genomics-derived or Genomics-enabling Innovation

1. The ability of genomics to address the user's issue;
2. The innovation results in significant improvement compared to other possible solutions.

C) Scientific Criteria

1. The scientific excellence of the proposed research, as confirmed by peer review; particularly the extent to which the proposed research will establish a proof of concept for the use of genomics-based or genomics-enabling technology in the context of interest.
2. The feasibility of milestones and adherence to the critical path, objectives and proposed goal;
3. The quality of the scientific environment in which the work will be conducted.

D) Next Steps in the Process of Use, Implementation, or Commercialization

Applications will be evaluated according to one of the following two avenues:

a) Potential to obtain subsequent funding

1. Identification of subsequent funding source(s);
2. Demonstration of project eligibility, and potential for integration of results by the User;
3. Demonstration of the need for proof of concept, for example, to meet an eligibility criterion or prior assessment;
4. Description of the leverage effect of the proposed GI Program project, for example, by including a financial plan of subsequent steps, including public and private funding sources.

b) Potential for technology integration by the User

1. Description of the integration of results by the User;
2. Demonstration of the integration of project results;
3. Demonstration of the need for a proof of concept for the User;
4. Description of the anticipated impact of the proof of concept on the User.

E) Commercialization/Implementation Plan

The path to commercialization or implementation of the innovation is realistic and clearly defined:

1. The steps to be taken are grounded in a proven business model;
2. The proposed approach is feasible based on a realistic timeframe;
3. The sources of funding in support of this approach are identified and realistic;
4. Legal, social, economic, logistic, etc. barriers have been identified and a strategy to minimize their impact is described.

F) Social and/or Economic Benefits

1. The quality of the plan for the transfer, dissemination, mobilization, use, implementation or commercialization (if applicable) of the expected results;
2. Demonstration of how the research results will contribute to job creation and economic growth in Quebec and their impact on society, quality of life, health and the environment, including the creation of new policies in these areas;
3. Expected outcomes are quantified and realistic.

G) Project Management and Expertise of Project Leaders

The value and experience of the team members mentioned in the application: the appropriateness of the training and/or track record for the proposed research, in particular, prior contributions to public-private collaborative research; the importance and originality of the recent achievements of the applicant(s); and the level of ability of the academic partner to carry out the proposed work.

H) Inclusion of EDI Principles

1. The extent to which the research plan applies to the needs or experiences of various groups (beneficiaries);
2. The extent to which the genomic solution is to be conducted with relevant and impacted communities, how knowledge will be accessed and shared;
3. The extent to which the proposal considers the different forms of support required (e.g., financial, logistical, cultural, linguistic) to ensure that the individuals or communities involved in the research can meaningfully participate in it (as participants or end users, etc.);
4. The extent to which the results of the research project will be disseminated and applied to the population as a whole or be limited to certain groups;
5. EDI considerations to the constitution of the team (composition of the research team [recruitment and retention], roles of team members in research design and research execution, transfer of knowledge and training, etc.).

The evaluation will be based on the overall proposal and the actions or methods planned by the research team to adhere to the principles of EDI.

I) Financial Criteria

1. Budget and financial control processes
    a. Budgeted costs comply with the definition of eligible costs (section 4.2);
    b. Budgeted costs align with the proposed research plan and activities; the relationship between the proposed costs and potential benefits of the research proposed is evident;
    c. Budgeted costs of the project are reasonable.

2. Co-funding
    a. The proposed co-funding plan aligns with the guidelines for eligible co-funding described in section 4.4;
    b. Documentation is provided, which may include letters of commitment or signed agreements from co-funding sources, quotes from suppliers, or confirmation of grants received;
    c. The proven relationship between the proposed co-funding and the objectives of the project.

APPENDIX B – Equity, Diversity, and Inclusion Guiding Principles

Génome Québec is committed to incorporating values of Equity, Diversity and Inclusion (EDI) into its funding opportunities. It is recognized that the quality of genomics research and the resulting solutions are enriched when different perspectives and expertise collaborate, allowing for a range of viewpoints and ideas. Projects are expected to integrate EDI concepts and principles, highlighting concrete actions to foster an inclusive research environment, diversify team composition, consider or involve individuals impacted by the research, and make the findings accessible to diverse audiences.

EDI principles are transversal and should be reflected throughout the entire proposal, incorporated into the project design. We have outlined five areas below, along with some guiding questions to assist you in addressing EDI considerations and designing concrete actions for integration into your research proposal. Some categories might not applicable to your project.

1. Community Engagement

Thoughtful interactions with end users can help build solutions that will be quickly adopted and meaningfully impact the community. The ‘’user driver’’ aspect brings depth and weight to the project and acts as a selling point of the proposal. Here are some key items to consider:

a. Engagement and consultation with users and stakeholders
    i. Did stakeholders participate in the development of research questions or objectives?
    ii. Is the diversity of relevant stakeholders involved enough? Are we missing key parties?
    iii. How will stakeholders be involved throughout the project?
b. Relevance
    i. Are research questions and solutions addressing the needs of stakeholders? Were they defined or defined following consultation with stakeholders?
    ii. Is the project informed by the community?
    iii. Is the developed technology useful and practical for users?
c. Inclusion
    i. How will you integrate diversity in the selection of participants during consultations (survey, meeting, round tables, workshops)?
    ii. Do you plan to consult with marginalized groups or communities?
d. Result sharing
    i. Are the dissemination strategies of results adequate for various stakeholders and community impacted by the research?
    ii. Will results, data generated, and technologies developed accessible to the various participants of the research project? Will participants be automatically informed of the project outputs?

2. Team Composition and Environment

Building a strong research team is paramount to the completion and success of the project. Skill, expertise and proficiency are essential, but EDI consideration can also help establish and maintain a high-performing, diverse team. Consider:

a. Creating a diverse team and inclusive environment:
    i. It is not recommended to include statistics regarding the diversity of your research team as it could be interpreted as ''Tokenism'' of underrepresented groups within your research team.
    ii. Do not be discouraged by international hires because of immigration procedures.
b. Adopt and describe best practices for recruitment and human resource management:
    i. Unconscious bias training (See Unconscious Bias and Recruiting)
    ii. Following the institution's Human Resources policies and adhering to EDI principles for selection (criteria, postings, selection committee is diverse, the candidates are divers, etc.)
    iii. Establishing conflict management guidelines
c. Early-stage researchers, receptors, and trainees:
    i. What type of support and mentorship will be provided to each group?
    ii. Does the institution have specific programs for trainees?
    iii. How will you encourage trainee recognition and promote inclusive excellence?
        1. Scholarships (implication, parental support, excellence, diversity, travel, publishing, etc.)
        2. Participation in student competitions (conferences, ''Ma Thèse en 180 secondes'', etc.)
d. Clarifying roles within the research team for accountability:
    i. Responsibility of the research design
    ii. Executing and analysis of research activities
    iii. Dissemination of results
    iv. Interaction with stakeholders
e. Training:
    i. EDI training for all your team (resources from your institution, Dimensions charter, workshops, consultants, etc.)
    ii. Ensure equity in training opportunities within the team

3. Barriers and Benefits

This section pertains to the project's experimental design and aims to refine the genomics and its ethical, environmental, economic, legal and social aspects (GE^3LS) portion of your proposal. The goal is to increase the likelihood of project success by:

a. Limiting unintended consequences of the innovation
b. Addressing systemic barriers (policies, procedures, practices) and proposing concrete actions to mitigate them
c. Proposing risk mitigation strategies:
    i. Are there barriers to the change of practice? How will they be handled?
    ii. How will delays impacting the research plan and team be addressed?

d. Incorporating EDI elements into the research plan is essential for successful implementation. This could include, but is not limited to:
    i. Elaborating a strategy to engage a diversity of users and stakeholders;
    ii. Determining whether social or demographic data will be collected and if analyses will be disaggregated according to key identity factors;
    iii. Research that relies on animals or living organisms that are either male or female should include a note on disaggregated sex analysis;
    iv. Carefully selecting research methodologies (participatory methods, sampling strategies, participant profiles, consultants, co-creation of collection tools, etc.).

4. Accessibility

Defined as ''the combination of aspects that influence a person's ability to function within an environment'', it refers to the openness to put in place specific accommodations (logistical, financial, technical, linguistic, cultural, physical, related to work-family balance, etc.) for your research personnel to thrive in your laboratories and participate efficiently to the research effort. It could also refer to accessibility of your research deliverables, outputs, and datasets. Your proposal could elaborate on:

a. How can you provide a safe, inclusive and barrier-free environment? How will this type of support be managed, who will be responsible for it?
b. The management of parental or other types of leave policies and work-family or study-family balance measures;
c. The accessibility and sharing of research data within the team, especially in a decentralized context or within a network. Are there barriers to the sharing of data?
d. Considering not only accessibility in the context of lab work, but also potentially in field research while travelling and working with users or stakeholders;
e. Will the research results be accessible in lay terms? Are there intentions to present the research to a broader audience (i.e., people outside of the field)?

5. Research with Indigenous Communities

If your project plan included research with indigenous communities, it is essential to read and be aware of the different protocols and guidelines related to indigenous collaboration (see links below). Teams should carefully consider if and how this aspect should be addressed. For instance, consider:

a. Co-creation principles, including engaging with the communities and identifying their needs, interests, expectations, to elaborate research objectives or formulate research questions;
b. The First Nation principles of ownership, control, access, and possession (OCAP);
c. Aligning with reconciliation principles from the Canadian Government or other recommended action towards reconciliation;
d. Referring the Tri-Council Policy Statement, Chapter 9, on research involving the First Nations, Inuits and Métis People of Canada. This is considered a staple guide for research in Canada;
e. Adopting the Assembly of First Nations Québec-Labrador Research Protocols;
f. Favoured methods for dissemination of results inside and outside the community;
g. Intellectual property principles within indigenous communities could differ, requiring discussions and mutual agreement on the methods to be used;
h. Decolonization principles.

Other References:

- BAKER Jocelyn et VASSEUR Liette "Inclusion, diversité, équité et accessibilité (IDÉA) — Pratiques exemplaires à l'intention des chercheurs", Commission canadienne pour l'UNESCO, Ottawa, Canada, août 2021
- Chaire pour les femmes en sciences et en génie au Québec - Outils pour l'ÉDI en recherche
- Commission de la santé et des services sociaux des Premières Nations du Québec et du Labrador, UQAT, UQO, Réseau de recherche et de connaissances relatives aux peuples autochtones — Boîte à outils des principes de la recherche en contexte autochtone
- Réseau québécois pour l'équité, la diversité et l'inclusion (RQÉDI) — Ressources
- Conseil de recherche en sciences naturelles et en génie du Canada — "Guide du CRSNG pour la prise en compte des considérations en matière d'équité, de diversité et d'inclusion dans la recherche"

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