NEW FRONTIERS IN RESEARCH FUND (NFRF) – TRANSFORMATION 2022 LETTER OF INTENT (LOI) TIPS & RESOURCES

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OVERVIEW

This document includes tips to guide you in completing the various sections of the LOI and fully addressing the assessment criteria. This document is not intended to replace a careful review of the Transformation competition overview or the LOI instructions.

You can use this tips and resources document in conjunction with the LOI checklist, available on the University of Toronto funding opportunity page.

Assessment Criteria:

The multidisciplinary panel will use the following criteria when reviewing your LOI:

- Interdisciplinarity
- Equity, diversity, and inclusion, and early career researchers
- High risk
- High reward
- Feasibility

Reviewers will assess Interdisciplinarity, EDI, and Early Career Researchers on a pass/fail basis. The High Risk, High Reward, and Feasibility will be assessed on a seven-point scale, ranging from “Exceptional” to “Poor” (see the merit indicators for details).

Because this is a highly competitive funding stream, successful LOIs will most likely need to achieve all “Exceptional” scores, or at least a mix of “Exceptional” and “Excellent.”

LIST OF PARTICIPANTS

Additional Co-PIs, Co-Applicants, and collaborators can be added at the LOI stage. Additional Co-PIs and Co-Applicants must complete their profiles in the Convergence Portal. Collaborators do not need to create an account in the Convergence Portal.

Reviewers from the previous LOI round noted that teams based at one institution or in one province were less competitive than LOIs with broader geographic representation. Wherever possible, include team members from **multiple institutions and provinces/regions**.

While additional members may be added at the LOI and application stages, those identified at the NOI stage are expected to remain part of the project team. All **core members** of the team are expected to be confirmed when the LOI is submitted.

RESEARCH PROPOSAL (maximum 10 pages)

There is no set format for this section, but be sure to address all of the points below:

- **Novelty of approach:** explain the approach, how it differs from other approaches, and why it is likely to succeed
- **Interdisciplinarity:** describe the interdisciplinary nature; explain who brings different disciplinary perspectives and how they will be integrated
- **Feasibility:** provide a brief overview of the methodological plan, indicating GBA+ considerations (or providing a justification if no GBA+ consideration); describe access to needed infrastructure (if applicable); and summarize the team's strength and expertise
- **Anticipated transformation/change/impact:** describe the anticipated impact/its significance, the likelihood of the impact being realized, and the short- and long-term benefits

General Tips

- The LOI will be reviewed by a multidisciplinary panel with a diversity of subject-matter expertise, so you should ensure that the proposal is clear and compelling to both non-expert and expert reviewers.
    - Write for a multi-disciplinary audience, including those who may have very limited familiarity with the proposed topic; avoid jargon and overly technical language.
    - At the same time, provide enough information and detail to persuade knowledgeable reviewers who may have expertise in the topic.
    - Ask both a subject-matter expert and someone outside the research area to read the proposal to ensure it is legible and compelling to a multi-disciplinary audience.
- Clearly convey for the reviewers why the proposed project is transformative—you want to "sell" the project and get the panel excited about the research and its impacts.
- Use the program's merit indicators to inform the development of your LOI, ensuring that you clearly address **all** of the bullet points assessed at the LOI stage.
- Use headings and sub-headings to make it easy for the reviewers to find what they are looking for.

Novelty of Approach/High Risk (20% of score)

- Be explicit in describing how the research is novel, world-leading, and expected to lead to real change. State this directly, making it extra-clear for the multi-disciplinary reviewers.
- Clearly explain the current gap in knowledge/technology, and describe how the proposed project/solution both addresses these gaps and has the potential to produce broader impacts (e.g., meets socio-economic needs, produces a scientific breakthrough, addresses environmental challenges).
- Include the potential challenges associated with implementation and describe plans to address these challenges. Explain why the identified approach is likely to succeed where others may have failed.
- Describe how the project integrates the knowledge of world-leading experts across disciplines.

Interdisciplinarity (pass/fail)

- Clearly demonstrate that the project is truly *inter*disciplinary, rather than *multi*disciplinary.
- Explain how the different disciplines will interact together, including a description of the integration of the different aspects or aims of the project. Demonstrate that it is a coherent "whole-stack" project as opposed to a series of separate projects.

- Provide a justification for interdisciplinarity that is specific to the project and compelling, rather than a generic explanation about the value of interdisciplinarity (e.g., why this particular combination of disciplines and this particular team of experts).
- Explain how researchers from the different disciplines will be integrated in project and how they will work together across the different aims.
- Describe the researchers' previous experience in interdisciplinary research collaborations. Explain if team members from different disciplines have worked together previously.
- Consider including a figure presenting the relationship between the team members' expertise, the project themes, and the methodology.

Feasibility (20% of score)

- Feasibility is assessed at higher level at LOI stage and is reviewed in greater detail at the full application stage. See the merit indicators for more information.
- The overall rating for the Feasibility criterion cannot be higher than the rating of any single element in the matrix. For example, if a reviewer scores most of the elements as Very Good, but the GBA+ element is Poor, then the overall rating for Feasibility cannot be higher than Poor.
- Include specifics as to how the team will carry out the research (methodology, objectives, and timeframe) and a realistic work plan.
- Demonstrate awareness of the current state of research. Include a concise literature review/state of the field and cite the key works in your list of references.
- GBA+ must be addressed and discussed in the proposal if it is applicable to the research. If the project draws on GBA+, it should be explained for all research aims (e.g., if there are three research aims and GBA+ is discussed in relation to only two aims, reviewers may assign a lower score).
- Demonstrate that the team has the resources necessary to complete the proposed project, clearly describing all required resources, infrastructure, facilities, etc.

Anticipated Change or Impact/High Reward (60% of score)

- Clearly describe the anticipated impacts, including the significant benefits for Canadians.
- Describe how the research will have a wide and diverse reach, and demonstrate the likelihood of success.
- Provide clarity in describing how the research objectives and aims are relevant to the various research outcomes, regions, populations, etc.
- Describe concrete, realistic, and measurable short-term benefits, as well as the wider and longer-term benefits and impacts.
- Ensure that information regarding change or impact is specific and well-defined (rather than vague or high-level). Demonstrate impact with tangible examples wherever possible.

EQUITY, DIVERSITY & INCLUSION AND EARLY CAREER RESEARCHERS – OVERVIEW

NFRF Transformation Letters of Intent must demonstrate the team's commitment to equity, diversity, and inclusion (EDI), as well as the meaningful integration of early career researchers (ECRs).

General Tips for Addressing EDI and ECRs

- If this is your first time writing about EDI in a research funding application, you are encouraged to consult the EDI in Research & Innovation website, including the introductory videos available on the University resources page.

- **Do not simply copy and paste** text from this document into your application. Please tailor and customize these suggestions to fit the EDI context that is specific to your research team or research area(s). You are also encouraged to individualize the text to reflect team members' past experience in recruitment, mentoring, and training.
- Structure the content of the EDI and ECR sections around the merit indicators, ensuring that you directly speak to all of the required points in the "Pass" column.
- Per the full application instructions, applicants **must not** include any personal information about team members or trainees in the EDI section. The focus is on the team's commitment to EDI, as demonstrated by concrete plans and actions, not its demographics. You may include information about team members' affiliations (institution, department, lab, etc.) , but not any personal information (**including names**). The inclusion of the self-identity information of any of the team members may result in the application being withdrawn from the competition.

EDI ANALYSIS OF CONTEXT (maximum 2,500 characters)

This part of your Transformation LOI must describe the EDI context of team, focusing on the specific circumstances or EDI challenges related to the team members, trainees, and/or the research disciplines.

- You might start by asking the following questions (adapted from this resource from WISE Atlantic/CFSG):
  - Is there diversity in the current team, or in the relevant research fields in general?
  - If no, what are some of the key explanations? What systemic barriers exist?
  - If yes, is this diversity the result of intentional actions or of chance? What can teams do to more **intentionally** engage and support members of under-represented groups?
  - What are the usual practices for recruitment and research training in your team or research disciplines? Are these practices fair and consistent?
  - Do all team members and trainees feel included and supported in their success? Why or why not? What more could be done to proactively foster this sense of belonging?
- When thinking about this context, point to specific systemic barriers and structural biases. For example, you could discuss some of the following barriers, as relevant:
  - The impact of unconscious bias in recruitment/hiring and peer review
  - The effects of the research climate and culture on members of under-represented groups
  - Narrow definitions of excellence that undervalue emerging areas of research or non-traditional scholarship
  - A lack of role models/mentors for students, trainees, and junior faculty members from under-represented groups
  - Barriers experienced by researchers with disabilities
  - Disproportionate service burdens faced by under-represented faculty members
  - The impact of stereotype threat on the recruitment/retention of members of under-represented groups
- For more information on systemic biases and barriers, please consult the "Further Reading" page of the EDI in Research & Innovation website.
- As noted in the merit indicators, the context and the barriers identified in this section must be addressed by the specific actions you describe in the remainder of the EDI section.

- Describe the team's overall commitment to advancing EDI and addressing these barriers. As applicable, discuss the team's strengths related to EDI. For example, describe team members' expertise in EDI and their experience in initiatives or leadership activities designed to promote an equitable, diverse, and inclusive research community.
- **Do not** include demographic or identifying information about team members or trainees, including names.

EDI PRACTICES

In the next sections of your Transformation LOI, you will name and describe the best practices that you will adopt for each of the following areas:

- team composition and recruitment processes;
- training and development opportunities; and
- inclusion

For examples of best practices to advance EDI, please consult the VPRI handbook on **Addressing EDI in Your Research Funding Application (Research Teams and the Training of Highly Qualified Personnel)**. This handbook offers a range of potential practices to support EDI in your research team and HQP training, as well as excerpts from successful funding applications at U of T. Links to institutional resources have been included for your reference and information; it is **not sufficient** to simply state that you will follow an institutional policy or to link to an existing institutional policy or resource.

You are also encouraged to consult the following resources:

- the NFRF Best Practices in Equity, Diversity and Inclusion in Research
- the external resources available on the EDI in Research & Innovation website

These resources are intended to provide you with a wide range of potential practices. While researchers should strive to implement EDI in all aspects of their research and training programs, because there are strict character limits in the NFRF EDI form, you will need to **describe the particular strategies that are most applicable** to your research team context. At the same time, this list of resources and suggested practices is not exhaustive, and you are encouraged to describe other relevant strategies or resources with which you are familiar.

Provide the Best Practices (maximum 250 characters for each area)

For each of the three areas (team composition and recruitment, training and development, and inclusion), provide the best practices that your team has adopted/will adopt.

- For each area, identify **at least one concrete practice**. Reviewers will be looking for examples of specific steps and processes.
- Name or list the practice(s) using concise language, providing further description in the "Relevance, Approach, and Expected Impacts" section (see below).
- Each of these specific practices must address the context and challenges you have described in the "Analysis of Context" section.

Provide the Relevance, Approach, and Expected Impacts (maximum 2,500 characters for each area)

For each of the three areas (team composition and recruitment, training and development, and inclusion), provide an explanation of the best practices you have identified in the preceding section.

For examples of promising EDI practices, please consult the VPRI handbook on **Addressing EDI in Your Research Funding Application (Research Teams and the Training of Highly Qualified Personnel)**, which includes guidance on implementing EDI practices on an ongoing basis.

Describe the salience, approach, expected impacts, and how the impacts will be measured:

- Describe the relevance to your team for each of the identified practices. Each practice must be **specific to the context of the research team** you have described in the "Analysis of Context" section; be sure to make the connections between the context and the practices clear for the reviewers.
- Describe how the team members are already engaged in EDI practices. Describe actions undertaken to date, as well as how they will continue going forward.
- Describe the implementation of these practices—say how you will carry them out, what specific steps you will take, how you will follow through on these practices over the life of the grant, etc.
- Describe any potential challenges in implementing these practices, as well as plans to mitigate or address these challenges.
- Describe the anticipated impact of these practices in advancing EDI within your team, and include the measures/indicators for assessing this impact.
- When assessing impacts related to recruitment, keep in mind that you most likely won't have access to self-identification information for trainees and team members. Instead of measuring impact by providing demographic information, for example, you could point to the size and breadth of applicant pools or to successful outreach and engagement with prospective trainees/team members.
- Other measures of impact might include the following:
  - Successful completion of EDI team training/education (e.g., number of team members completing EDI education, number of workshops attended, hours of training completed)
  - Equitable delivery of training and development opportunities, relative to career or academic level (hands-on experience, co-publications, conference presentations, mentorships, networking, etc.)
  - Successful execution of mentorship/training plans
  - Effective resolution of concerns/complaints
  - Organization of accessible and inclusive events
  - Increased diversity among invited speakers or presenters

EARLY CAREER RESEARCHERS (maximum 3,500 characters)

In this section of your Transformation LOI, you will provide a description of how ECRs will be integrated into team activities. Include plans to support ECRs' leadership and development throughout the project.

- Provide **concrete measures** to show how ECRs will be actively and meaningfully involved in the research, training, and knowledge mobilization activities of the team.

- Wherever possible, go beyond the minimum requirement of including one ECR in the team, especially if there are ECRs who may bring valuable expertise or interdisciplinary experience to the project.
- Indicate how ECRs will be involved over the lifetime of the project.
- Describe how the expertise of ECRs on the team will contribute to the success of the proposed research and to the interdisciplinary aims of the project.
- Demonstrate how ECRs will be engaged in team leadership, management, and/or decision-making.
- Describe the ways in which team leaders will develop ECRs' capacity through workshops, networking opportunities, career development supports, and other resources.
- Discuss the mentorship opportunities and supports provided to ECRs. Ensure that ECRs have access to a network of mentors to foster their career development and support them in building a complementary set of skills (interdisciplinary research, experience using infrastructure, publishing, leadership, HQP training and development, lab management, knowledge of EDI, etc.).
- Describe how participation in the team will further position the ECRs as leaders in this topic or in interdisciplinary research.
- If ECRs will act as mentors to trainees, ensure this mentorship work is equitably distributed and that ECRs are not over-burdened.
- While this section may include information about team members' affiliations (including institutions, departments, and labs), it must not include personal or identifying information, including team member names.