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How to Use this Guide:

- We recommend reading the “LOI Application Overview” on page 2 first. Then, read through all sections or use the hyperlinks in the above Table of Contents to navigate to the particular section(s) of interest.
- Language directly from NFRF (LOI Instructions, additional Convergence Portal Instructions, Criterion and Evaluation Matrix details, and FAQs) appears in boxes.
    - While SPARC has updated this language for the 2022 competition, applicants should always refer directly to the NFRF website for official instructions/guidelines, via the links provided.

NFRF Transformation LOI Application Overview

NFRF LOI Instructions: You must complete the LOI using the Convergence Portal. Follow the instructions provided in the Convergence Portal to complete and submit your LOI.

The NPI must complete all sections of the LOI and submit it via their institution's research administrator. The co-PIs and co-applicants must each complete their own profile before the NPI submits the LOI to their research administrator. Team members will be able to see all sections of the LOI, but will not have edit access.

It is the responsibility of the NPI to verify the page lengths and formatting of any uploaded attachments. Should a submitted application contain one or more attachments that do not comply with the page length or formatting standard [Instructions for Attachments], the application may be withdrawn from the competition.

Guidelines for the Entire Application

EDI-type personal information / personally identifying information (e.g., age, gender, racial background) should NOT be included ANYWHERE in the application: Applicants must protect the privacy and confidentiality of all team members. Information that identifies the personal information (self-identity information) of any of the team members may result in the application being withdrawn from the competition.

Affiliation-type identification information IS allowed: Although "affiliation of team members (including departments, lab groups, etc.)" details are identifying, they may be included because they are not EDI-type personal information.

Project Description

NFRF Convergence Portal Instructions: If your proposal is funded, this description will be used for promotional purposes outside the research community to inform the government, the media and members of the public who request information about funded research.

Upon submission of the LOI, you will be unable to make changes to this section during future stages of the competition.

Overall Suggestions

Optimal time for revisions: The following two sections were submitted at the NOI stage; however, they may be updated prior to LOI submission. Consider revising them once you have developed your Research Proposal and EDI/ECR sections to ensure content alignment.

OUTLINE OF CHALLENGE

NFRF Convergence Portal Instructions: Provide a brief overview of the challenges or issues to be addressed and the goals or objectives of the project.
Maximum character count: 3500

OVERVIEW OF APPROACH AND POTENTIAL CHANGES

NFRF Convergence Portal Instructions: Briefly describe the approach to be taken and the anticipated changes or impacts that are likely to result from the project.
Maximum character count: 3500

Research Proposal

NFRF LOI Instructions: The research proposal should address the points below. Ensure you use language that can be understood by a multidisciplinary committee. The allocation of space and the order are not prescribed. The use of headings is highly encouraged.

- Novelty of Approach
- Interdisciplinarity
- Feasibility
- Anticipated transformation/change/impact

Maximum length: 10 pages if written in English; 12 pages if written in French; includes diagrams and illustrations

Overall Suggestions

Section length: Each section should be at least 1.5 pages to ensure you are sufficiently addressing the corresponding criterion as per the Evaluation Matrix elements. This leaves ~4 unallocated pages to flesh out specific sections/criteria/elements.

Headings and sub-headings: Use the four Research Proposal headings in the LOI instructions, "Novelty of Approach", "Interdisciplinarity", "Feasibility", and "Anticipated Transformation/Change/Impact", as your headings, in this order. Then, use the corresponding Evaluation Matrix elements as sub-headings under each, grouping them as needed to present your content clearly/logically (suggestions for how to do this are provided in the following pages).

Standardized style/structure: A consistent formatting style/structure can clearly organize, communicate and distinguish content.

- Standardize formatting styles used for headings vs. sub-headings (vs. sub-sub-headings, if relevant).
  - For example: **bolding**, CAPITAL LETTERS, underlining, *italics* or a 'prudent combination' (i.e., no more than 2 styles, preferably **avoiding bolding + underlining** which can seem overwhelming in .pdf format).
- For emphasized text, use a different formatting style entirely (and consistently) to clearly distinguish it.
  - Select 'standalone' text so that reviewers understand the meaning of the highlighted text at a glance without needing to read anything else.
- For lengthy embedded lists, try a numbered/lettering scheme, with bolding for emphasis (e.g., **(1)**, **(2)** or **(a)**, **(b)**). Use a style that distinguishes it from other numbered/lettered sections/lists already in use for easier navigation and understanding.

Possible added section: Consider an initial "Overview"/"Introduction" to briefly state the central challenge/problem and your overarching project goal. Otherwise, reviewers must wait for this important information until the "Feasibility" section, which is the 3rd criterion to be addressed.

Strategic use of 'orientation text': For lengthy sections/sub-sections (>1 page; e.g., "Feasibility" section, "Workplan" sub-section), begin with 1-2 overview sentences to orient reviewers to what they are about to read.

Manage overlapping content between sections: The criteria contain overlapping elements which increase potential for duplicated content (e.g., Team in "Interdisciplinarity" and Research Team in "Feasibility"). Determine which section will contain the central details, with brief statements ('teasers') elsewhere to create linkages and flow—aim for cohesion over repetition!

Strong/proactive and positive language: Use active tenses in your sentences over passive statements, to clarify meaning and maximize impact. Aim to avoid negative phrases (e.g., "although" and "however" rather than "but"; "both A and B" instead of "not only A, but B as well").

Define key terms and acronyms: Define key terms, groups and acronyms at 1st reference (e.g., who is "the team"), then use them exclusively; overall, limit acronyms to those generally accepted and/or used >5-10 times in the text.

Provide concrete evidence to support all statements (i.e., claims): It is not enough to simply *say* that you will do something; you must explain WHAT you will do, HOW you will do it and WHAT will be achieved. Provide concrete detail (e.g., examples) to enable reviewers to evaluate your content favourably against the criteria/elements, to generate top scores/rankings for your application.

Ensure no "EDI-type Personal Information" is included: You can say "Dr. ABC is an expert in XYZ at UBC", but not "Dr. ABC, a female, is an expert in XYZ at UBC".

Possible OVERVIEW / INTRODUCTION section

Specific Suggestions

Briefly summarize the key points of your proposal, including the central challenge/problem, your overarching research goal, your project's novelty and its expected impact.

NOVELTY OF APPROACH section

NFRF [LOI Instructions]: Explain the approach and how it differs from other approaches taken to address the challenge. Rationalize why this approach is likely to succeed.

NFRF Criterion (High Risk ≈ Novelty of Approach): In the context of the Transformation stream, high risk refers to the novelty of the proposed approach to the challenge. Proposals will have to explain:

- why the project is novel, as it relates to the latest methods, concepts, information, and techniques;
- how the approach builds on and benefits from expertise and resources across Canada and/or internationally;
- what makes the approach "world-leading"; and
- why the approach is expected to lead to real change.

NFRF "Exceptional" Rating Definitions for Key Elements from [Evaluation Matrix]:

- ***Novelty:*** Highly innovative, pioneering a new approach building on the latest methods, concepts, information and techniques.
- ***Expertise:*** Integrates expertise from world-leading experts in all disciplinary areas.
- ***Approach:*** Represents a world-leading approach, a "first of its kind" project.
- ***Cogent (or: persuasive, plausible):*** Highly compelling case for why the approach is likely to succeed where others have failed. (Note: The viability of the project plan is assessed under the Feasibility criterion. The focus of this element is on the persuasiveness of the argument.)

Specific Suggestions

Combined *Novelty, Expertise and Approach* sub-section

Group common/overlapping elements into a single sub-heading: These three elements may be logically addressed together.

Present your project's novelty and world-leading elements: Use summary statements that are accessible to a multidisciplinary review panel.

Highlight the high-risk dimension of the proposed project: Demonstrate that your proposal constitutes a leap rather than an incremental step in the status quo.

Incorporate key terms: "innovative", "novel", "new", "original", "pioneering", "world-leading", "cutting edge", "paradigm shift", "first of its kind", "a global first", etc.

Questions to consider as you draft content:

- What is your innovative approach? How is your team pioneering a new approach? How does it build on the latest methods, concepts, information and/or techniques?

- Who is on your team? What world-leading expertise does each member contribute? Which disciplinary areas are represented? What strategies will you use to integrate members in an effective, efficient and productive manner?
- What is your world-leading approach? In what way is this considered a “first of its kind” project? How is it novel rather than simply an extension of existing approaches or the next logical step in an established line of inquiry that is fundable through conventional channels?

***Cogent* sub-section**

Incorporate key terms: “timeliness”, “novel opportunity to leverage/catalyze”, “as evidenced by”, “unique circumstances/conditions”, “increased potential for success”, “maximize”, “optimize”, “proven success”, etc.

Questions to consider as you draft content:

- How exactly do you propose to success where others have failed? What is your rationale/justification? What evidence supports your claim?
- Is there something new/unique about your approach that increases the potential for your project’s success compared to previous attempts?
- Do unique factors/circumstances exist in the external environment right now (government policy changes, government investment, etc.) which, combined with your novel approach, can be leveraged to increase your project’s potential for success?
- Does the timing of this 2020 Transformation competition provide any additional and/or unique advantages that will maximize your chances of success and project impact?
- What are the significant advantages you will leverage right now that are too compelling for Transformation reviewers to ignore?
- Why this project, your team, this approach, and now, under these circumstances?

INTERDISCIPLINARITY section

NFRF LOI Instructions: Describe the interdisciplinary nature of the proposed approach.

Explain who will bring the different disciplinary perspectives to the project and how they will be integrated.

NFRF Criterion: Transformation projects must propose an interdisciplinary approach that integrates different disciplinary approaches to bring a novel perspective to address the research challenge. Proposals must explain how the disciplinary perspectives, methodologies and techniques will be integrated and must demonstrate that the team has the required expertise to execute the interdisciplinary approach. The proposal must also explain why an interdisciplinary approach is required and/or the added value of this approach to the research problem.

NFRF “Pass” Definitions for Key Elements from Evaluation Matrix:

- ***Perspective:*** Proposes a novel interdisciplinary approach. Incorporates different disciplinary approaches, bringing a novel perspective to the defined challenge.
- ***Approach:*** Proposes the application or adaptation of frameworks/tools/methods/techniques from one discipline to solve a problem in another discipline. (This may also apply for projects where there is a history of collaboration between the disciplines.)
- ***Integration:*** The various disciplinary approaches and perspectives are fully integrated; the project is not an amalgamation of disciplinary-specific approaches.
- ***Team:*** The interdisciplinary approach is reflected in the team.
- ***Proposal Design:*** Designed from an interdisciplinary perspective.

Specific Suggestions

Combined *Perspective, Approach and Proposal Design* sub-section

Group common/overlapping elements into a single sub-heading: These three elements may be logically addressed together.

Demonstrate that interdisciplinarity is aconstitutive and necessary feature of the proposal: Describe your project challenge as unanswerable without an interdisciplinary approach (including team composition and mentorship approach), that requires the kind of budget and timeline provided by this funding opportunity.

Emphasize how the Transformation program is essential for success: Convey how the novelty and uniqueness of your proposal demands Transformation funding because its complexity (i.e., interdisciplinarity) exceeds existing individual Tri-Council competition criteria and their standards of risk-tolerance.

Incorporate key terms: “innovative interdisciplinary approach”, “new/original perspective”, “co-design”, etc.

Questions to consider as you draft content:

- What is your project’s novel interdisciplinary approach? Which different disciplinary approaches is your team incorporating? What strategies will you use to ensure successful integration? What novel perspective will result for your team to tackle your project in a new way?
- Which tools/methods/techniques—and from which disciplines—will be applied to which other disciplines? What adaptations will be applied by your team to achieve the project goal?
- How is your proposal design interdisciplinary? How is it different from existing discipline-specific designs? What advantages does it offer compared to the status quo?
- How have you been able to be more creative in terms of team members, proposal design/research approaches and project tools/methods/techniques given this interdisciplinarity component? What exactly are your 'new interdisciplinary components’?
- How are your perspective, approach (tools/methods/techniques and modifications) and proposal design different in this project because you are applying to the interdisciplinary Transformation program? How is this proposal different from what you might have submitted to CIHR/NSERC/SSHRC as a follow-up project to your previous/current grant?
- What are the interdisciplinary benefits afforded to your team, this project, your approach and the anticipated transformative impacts because of the ‘freedom’ provided by NFRF to cross multiple Tri-Council mandates? How does your approach better position your project and equip your team to challenge the status quo and pursue truly transformative research?

Combined _Team and Integration_ sub-section

Group common/overlapping elements into a single sub-heading: The two remaining elements may also be logically addressed together.

Showcase your unique team: Describe how the multi-faceted nature of the problem/challenge requires that your team of world-leading experts from a range of different disciplines come together.

Lay groundwork at the LOI stage for information required in the Full Application: Provide initial, high-level biographical information (e.g., coordination/integration of team member contributions) since four pages on the topic are required at Full Application), as well as formal management plan details (e.g., project management, grant administration) since three pages on the topic are required at Full Application.

Incorporate key terms: “integrated interdisciplinary approach”, “collaborative team interactions”, “supportive management structure”, etc.

Questions to consider as you draft content:

- How will you ensure your disciplinary approaches and perspectives are integrated to achieve your goal? What strategies will you use? How will you monitor progress, measure success, address challenges and make improvements?

- What management structure and strategies (e.g., team building) will you use to ensure successful interdisciplinary teamwork (i.e., communication between different research cultures with different ‘research languages’) and project implementation? What is your experience/track record with these strategies? How will you modify them to reflect your interdisciplinary team and approach? How will you monitor progress, measure success, address challenges and implement improvements?

Relevant NFRF FAQs

Q: What is required for a project to be considered “interdisciplinary”?

A: One of the objectives of the New Frontiers in Research Fund (NFRF) is to increase collaboration among disciplines that do not traditionally conduct research together, in the hope of achieving new breakthroughs. The group-level Canadian Research and Development Classification (CRDC) codes are used to confirm that the proposed research meets a minimum threshold for interdisciplinarity.

To meet the requirements for the Transformation stream, the proposed research must also incorporate areas of research that fall under the mandates of at least two federal research granting agencies (CIHR, NSERC, SSHRC). Projects are expected to engage the full range of disciplines required to achieve the project goals.

The multidisciplinary review panel members will ultimately assess the interdisciplinarity and determine whether the proposed research meets the requirements.

FEASIBILITY section

NFRF LOI Instructions: Provide a brief overview of the methodological plan. Indicate how gender-based analysis plus (GBA+) considerations impacted the proposed plan (or provide a justification of why they were not considered).

Indicate where or how the team will access any needed infrastructure (if applicable).

Present a synopsis of the strength of the research team, demonstrating the expertise available on the team.

NFRF Criterion: Feasibility covers the plan and the ability to execute the activities. It considers elements such as:

- problem or challenge being addressed;
- proposed approach, including GBA+/SGBA when appropriate;
- knowledge, expertise and capacity of the team;
- workplan and timeline;
- engagement and collaboration with First Nations, Inuit and Métis peoples (for Indigenous research) when appropriate;
- suitability of the research environment (i.e., access to required infrastructure); and
- management plans.

At the LOI stage, the evaluation will focus only on the feasibility of the proposed approach to the problem or challenge at a relatively high level. At the full application stage, the external reviewers and the multidisciplinary review panel will evaluate the project’s feasibility in more detail considering: the team; the detailed project plan (methodological approach, timeline, etc.); the management plans as they relate to performance measurement, administration of the grant, data, and training (as applicable); and support of the project.

NFRF “Exceptional” Rating Definitions for Key Elements from Evaluation Matrix:

- ***Challenge:*** The problem or challenge being addressed is significant and clearly articulated.
- ***Building on Current Knowledge or Prior Art:*** The application demonstrates that the research team is aware of current and relevant research, prior art, or knowledge. The proposed research may challenge paradigms but it is built on sound principles.
- ***Workplan:*** The proposed research project is clearly presented, with short- and long-term objectives clearly defined. The proposed work plan, including the methodological approach, is well described, reasonable and likely to be achievable within the proposed timeframe.
- ***Research Team:*** Assessed at the full application stage only.
- ***Management:*** Assessed at the full application stage only.

[Box continued on the next page.]

[Box continued from the previous page.]

- ***Resources:*** The research team has the necessary resources to complete the work. All resources have been described.
- ***Support (time, resources or financial):*** Assessed at the full application stage only.
- ***Gender-based Analysis Plus (GBA+):*** GBA+ considerations have been integrated into the methodological approach (if applicable). The impact on the methodological approach and/or design has been clearly described.
- ***Indigenous Research:*** Co-creation, co-leadership and co-ownership with First Nations, Inuit and/or Métis Peoples are clearly integrated in the project's design. The methodological and/or theoretical framework successfully incorporate key considerations of SSHRC's Merit Review of Indigenous Research. Attention to equitable processes and procedures for fair and respectful inclusion of Indigenous communities and their perspectives are evident.

Specific Suggestions

Possible *Introduction / Overview* sub-section

Strategic use of 'orientation text': "Feasibility" may be the longest section of the proposal, thus 1-2 overview sentences can help orient reviewers to what they are about to read. The "Workplan" sub-section, if it stretches >1 page, is another place to add this type of 'orientation text'.

***Challenge* sub-section**

Manage overlapping content between sections: If you began your proposal with an initial "Overview"/ "Introduction" section, (very briefly) reiterate your problem/challenge statements here.

Incorporate key terms: "significant challenge", "addressing a critical problem", "benefit to be realized", etc.

Questions to consider as you draft content:

- What problem will be addressed in six years? Who is this a problem for? Why is it significant?
- Who are your end user/stakeholder groups? Is your argument (rationale/justification)/ evidence clear and compelling to a broad audience?
- Why is now the time to tackle this?

***Building on Current Knowledge or Prior Art* sub-section**

Incorporate key terms: "solid foundation", "sound basis", "grounded in", etc.

Questions to consider as you draft content:

- What prior/current and relevant research/art/knowledge provides the basis for your project? What principles provide a solid foundation for it? Is your argument (rationale/justification)/evidence clear and compelling to a broad audience?

***Workplan* sub-section**

Provide a project overview timeline: Consider including a Gantt chart.

Clearly convey project feasibility: Provide sufficient high-level project/team governance details.

Lay groundwork at the LOI stage for information required in the Full Application: Provide initial, high-level formal management plan details (e.g., project management, grant administration) since three pages on the topic are required at Full Application.

Incorporate key terms: "short-term objectives", "long-term objectives", "appropriate and feasible workplan", "achievable within the six-year funding term", etc.

Questions to consider as you draft content:

- What is the plan? What are the short- and long-term objectives? What interdisciplinary approach will be used to achieve them? What challenges might arise? What strategies will ensure progress and how will this be monitored? Why is the timeline appropriate and feasible?
- What is your knowledge mobilization/translation/dissemination strategy? What will you monitor and measure? How will you know if your dissemination strategies are successful?

***Resources* sub-section**

Incorporate key terms: “all necessary/required resources”, “fully equipped to conduct the proposed project”, “essential infrastructure is available through labs/departments/institutions”, etc.

Questions to consider as you draft content:

- What resources are required to complete the project? Where are they located and which members have access to them? What challenges might arise? What strategies will ensure the project is completed as proposed?

***Gender-based Analysis Plus (GBA+)/Sex-and-Gender-based Analysis (SGBA)* sub-section**

Incorporate key terms: “sex”, “gender”, “critical component”, “essential analysis”, etc.

Questions to consider as you draft content:

- How have GBA+/SGBA been integrated into your design/approach and what benefits will they confer? What challenges might arise? What strategies will ensure progress?

***Indigenous Research* sub-section**

Incorporate key terms: “reciprocity”, “community”, “respect”, “commitment to respectful relationships with all Indigenous peoples and communities”, “grounded in the wisdom/cultures/experiences/knowledge systems of research conducted by, grounded in or engaged with First Nations, Inuit, Métis or other Indigenous nations, communities, societies or individuals”, “valuing and incorporating the existing strengths, assets and knowledge systems (including ontologies, epistemologies and methodologies) of Indigenous peoples and communities”, **“**Indigenous or traditional knowledge, according to Chapter 9 of the TCPS2”, etc.

Questions to consider as you draft content:

- What strategies are in place to support effective, seamless, productive engagement and collaborative work with First Nations, Inuit and Métis communities? Which members have expertise/experience working with these communities? What is the team’s track record in building relationships, collaborating and generating outcomes with these communities?

Note: The three remaining elements—***Research Team**, **Management***, and ***Support (time, resources or financial)***—are assessed at the Full Application stage, not the LOI stage.

> **Relevant NFRF FAQs**
>
> **Q:** The competition overview and the evaluation matrices refer to management plans related to performance, administration, data, training, etc. Why are these needed?
> **A:** Given the expected scale of the projects to be funded, with contributions from multiple partners, there is a need for clear management approaches to ensure that the project remains on track, that resources (including grant funds) are allocated appropriately and that changes can be made to project plans or directions, if needed, following unanticipated results. Management plans ensure that roles and responsibilities are assigned and that processes are in place to ensure appropriate oversight.

NFRF LOI Instructions: Describe the anticipated impact of the proposed work and the significance of the change.

Specify the likelihood that the impact will be realized and provide an explanation.

Detail the short-term and long-term benefits that will be realized.

NFRF Criterion (High Reward ≈ Anticipated Transformation/Change/Impact): To be transformative, funded proposals must have the potential for high reward. High reward is defined as the potential to create a significant and real change or impact. Applications must explain the anticipated change or impact that is likely to result and its significance. Proposals must also outline the major short-, medium- and long-term changes that are expected, the likelihood of their achievement, and who (or what) will be affected by the changes.

NFRF "High" Rating Definitions for Key Elements from Evaluation Matrix:

- ***Impact:*** Significant social, economic, environmental or health impact. Significant breakthrough—opens a new area of discovery. The substantial change that is likely to result is clearly defined and specific. There is a solid plan to measure the impact. The significance of the change is well articulated.
- ***Benefit:*** Significant benefit for Canada and Canadians. Benefit extends beyond Canada. (Note: Benefit to Canada may include reputational benefit relating to Canada's presence on the world stage.)
- ***Reach:*** Impacts a large and diverse community or communities. Significantly impacts numerous fields or applications.
- ***Likelihood:*** There is a high likelihood that the significant impact will be realized.
- ***Short-term Benefits:*** Short-term benefits are significant, clearly defined and specific, and will be measured.
- ***Training:*** Assessed at the full application stage only.

Specific Suggestions

Combined *Impact, Reach and Likelihood* sub-section

Group common/overlapping elements into a single sub-heading: These three elements may be logically addressed together.

Clearly address challenges: Identify challenges in implementing research outcomes and explain how you will overcome them (e.g., via team members/end users with knowledge translation/mobilization track records).

Include topical 'influencers' as available: If possible, incorporate current/newsworthy stories, topics, etc. from the public domain which are related to your project and highlight its 'high reward potential'.

Incorporate key terms: "significant impact and reach", "breakthrough", "substantial change/benefits", "social/economic/environmental/health impact", "achievable results", etc.

Questions to consider as you draft content:

- What are the significant (and interdisciplinary) social, economic, environmental and/or health impacts that will result in six years? What is the breakthrough your team will achieve to benefit Canada and the world? How will the project significantly alter/improve current practices? What will change and why is this significant? What new areas of discovery will result? How will you measure project impact? What milestones/deliverables will you monitor and measure to make sure the project is on track?
- How will you leverage your novel approach, interdisciplinary team, solid research foundation and feasible project plan to effect transformative change? What will be implemented/applied by Year 6? How will you know your project has been successful? What are the end points?
- What size and diversity of communities will be impacted? Which communities will benefit? Which research fields, sectors and/or applications will be impacted?

- What rationale/evidence supports your claim that the significant impact articulated in your proposal will be realized in six years (i.e., high likelihood of success and impact)?

Combined *[Overall] Benefit and Short-term Benefits* sub-section

Group common/overlapping elements into a single sub-heading: These two elements may be addressed logically together.

Incorporate key terms: “Canada-wide and global benefits”, “significant short-term benefits”, “positioning Canada as a global leader”, etc.

Questions to consider as you draft content:

- What significant benefits will be realized in Canada and globally? How will your results position Canada on the world stage? How will Canada be propelled to the forefront of cutting edge/paradigm shifting research discovery/application?
- What are your project’s short-term benefits (e.g., research findings/outputs)? How will you monitor and measure them? How will you know when they have been realized?

EDI

NFRF LOI Instructions: Applicants must clearly demonstrate their commitment to EDI in their research teams, including among students, postdoctoral fellows, co-PIs, co-aplicants and/or collaborators, as applicable. Teams should also consider diversity as it applies to career stages, sectors and institutions.

They must explain what actions they will take, the outcomes expected, and the assessment planned for each of the following three key areas:

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

Actions taken are expected to remove barriers and provide opportunities for the meaningful integration of individuals from all groups, including the four designated groups (women, Indigenous Peoples, members of visible minorities and persons with disabilities).

NFRF provides guidance on how to integrate approaches that support EDI best practices and information on how this criterion is assessed for submissions to all NFRF programs.

NFRF Best Practices in Equity, Diversity and Inclusion in Research Instructions: Do not provide information about the composition of the research team in any way (e.g., Dr. X identifies as a member of a visible minority; the team has X women, X men, and X individuals who identify as members of racialized minorities, etc.). Instead, give concrete examples of clear and specific initiatives and measures the team has undertaken to realize its EDI goals (see examples in the tables below).

NFRF Additional Convergence Portal Instructions: Applicants must consider the type of research environment they will establish as research leaders who are responsible for leading, training and mentoring their team members; and they must demonstrate a strong commitment to the principles of EDI.

Self-identifying / self-identity in the context of the EDI section – which must be avoided – is anything that might identify the personal information (e.g. age, gender, Indigenous identity, disability, or racial background) of anyone participating in the proposed research project. Therefore, you may include information that reveals the affiliation of team members (including departments, lab groups, etc.), but not that reveals their personal information (including their name).

NFRF Selection Criterion: EDI is a core element of the NFRF program. In the context of the Transformation stream, the EDI criterion also includes consideration of ECRs.

Overall Suggestions

Refer to SPARC-Annotated NFRF Best Practices in EDI Research Guide: Access EDI information tailored for UBC applicants by visiting SPARC's NFRF Resources webpage (CWL required).

NPIs as EDI champions: NPIs are ideally positioned to champion development of the team's EDI strategy and writing the EDI content in order to convey the genuine commitment and authenticity required by the criterion.

Confirming NFRF's definition of "self-identifying / self-identity" information: In the context of the Transformation program, these terms refer ONLY to 'EDI-type personal information', "race, colour, place of origin, religion, immigrant and newcomer status, ethnic origin, ability, sex, sexual orientation, gender identity, gender expression and age"(NFRF email to SPARC, April 2020)

Confirming that no "EDI-type personal information" should be included anywhere in the application: You are being asked to "demonstrate a commitment to EDI, as demonstrated by the meaningful engagement of members of the four designated groups (women, Indigenous peoples, members of visible minorities and persons with disabilities)", which increases the possibility of disclosing personal information.

Confirming that affiliation-type identification information is allowed: Although "affiliation of team members (including departments, lab groups, etc.)" details are identifying, they may be included because they are not EDI-type personal information. Also, the Transformation program does not require team member anonymity like the Exploration program does.

Expertise details can be included without disclosing EDI-type personal identity information: Indigenous and other research expertise can be discussed even though Indigenous identity, etc. may not be mentioned. For example: “A core team member is an expert in XYZ at UBC” (vs. “A core team female member, is an expert in XYZ at UBC”).

Incorporate key terms: Demonstrate a clear understanding that gender is socially constructed and non-binary. While it is prudent to mirror the Tri-Agency language (NFRF’s EDI Best Practices Guide uses both “visible minorities” and “racialized”), be mindful that language matters and that their terms may not align with the self-identities of the people they are intended to describe.

ANALYSIS OF CONTEXT section

NFRF Convergence Portal Instructions: The description should relate to the specific circumstances of your research team, environment, institution and/or field.

Explain your team’s specific challenges in relation to EDI.

Maximum character count: 2500

NFRF “Pass” Definition for Key Element from Evaluation Matrix:

- ***Analysis of Context:*** Shows understanding of EDI considerations / systemic barrier(s) in the context of the research team. Concrete and specific examples are cited in analysis. Demonstrates a strong commitment to EDI overall.

Specific Suggestions

Headings: “TEAM”, “ENVIRONMENT”, “INSTITUTION”, and “FIELD” are suggested as headings to organize content and convey to reviewers that the requirements have been met, although reversing the order may be more logical. Consider CAPITALIZED HEADINGS because formatting is not possible in text boxes.

Focus on the barriers (negatives) which will be overcome by your best practices: Outline the barriers which exist broadly in the fields/disciplines of the interdisciplinary research group, to set the stage for your discussion of specific best practices which will be used to meaningfully engage underrepresented groups (vs. an environmental scan which summarizes all the positive supports/resources in place at your institution). From the NFRF EDI Best Practices Guide: “all individuals in the ecosystem [must] recognize that barriers exist, develop a strong understanding of what the barriers are and their consequences, and understand how [they] can play a role in addressing them.”

Incorporate key terms: “key systemic barriers”, “field-specific barriers”, “specific to the discipline”, etc.

Questions to consider as you draft content:

- What EDI considerations/systemic barriers/challenges exist for your team (e.g., team, lab/office space, department/faculty/site/institution)?
- What due diligence did you undertake to analyze your situation?

***Field* sub-section**

Provide concrete evidence: Describe the current state of EDI in your research field. Highlight key barriers by noting any specific circumstances/issues (e.g., underrepresentation of women).

***Environment* sub-section**

Provide concrete evidence: Deliver an honest assessment of your current research environment, including key challenges existing in your social and physical environments, as relevant.

***Institution* sub-section**

Provide concrete evidence: Outline key barriers that exist at your institution(s), including Faculty/Dept. levels. If relevant, describe challenges related to implementing a multi-institutional EDI strategy. If unused characters remain, you could include details about current UBC (and, if relevant to your team, those of additional institutions) EDI efforts (e.g., UBC is part of the Dimensions pilot; President Ono is an EDI advocate and Co-Chair of the national EDI advisory committee; UBC's Equity & Inclusion Office has recruitment policies and guides), however this should not be the focus.

***Team* sub-section**

Provide concrete evidence: Explain key challenges faced by your team and team members. If possible/relevant, compare these to your faculty/field averages. Be aware of and honest about any EDI issues/challenges related to team building.

Overview of TEAM COMPOSITION AND RECRUITMENT PROCESSES / TRAINING AND DEVELOPMENT OPPORTUNITIES / INCLUSION sections

NFRF Convergence Portal Instructions: Identify the best practices applied.

Maximum character count: 250

Explain the relevance, approach and expected impacts of the best practices implemented, and how the impacts will be measured.

Maximum character count: 2500

NFRF "Pass" Definitions for Key Elements from Evaluation Matrix:

- ***Concrete Practice for Each Area:*** Lists at least one concrete practice that targets the specific context listed for each area.
- ***Implementation:*** Provides a description of how the concrete practice has been / will be realistically implemented.
- ***Impact:*** Explains how the concrete practices will impact EDI, and how it will be measured.

Overall Suggestions

List a maximum of two relevant best practices: Resist naming >2 practices as you likely won't have space to sufficiently expand on more than this in the 2500-character sections.

Select realistic and feasible best practices: NFRF will revisit this information (i.e., your EDI plan) during the mid-term review of award recipients, and funding may be terminated early if teams have not made sufficient progress in all five selection criteria.

Ensure content alignment between sub-sections: Relate "relevance, approach and expected impact" back to "best practices implemented" for each EDI topic (e.g., "Team Composition and Recruitment Processes").

Sub-headings: "RELEVANCE", "APPROACH", and "IMPACT" are suggested as sub-headings to organize content and convey to reviewers that the requirements have been met. Consider CAPITALIZED HEADINGS because formatting is not possible in text boxes.

Incorporate key terms: "measured by", "anticipated impact of the best practice", "implementations strategy", "relevance", "address", "best practice", "systemic barrier", "improve", etc.

Questions to consider as you draft content:

- For BEST PRACTICE(S): What systemic EDI barriers does your team need to address? What best practices will be implemented to address each barrier?
- For RELEVANCE: Why did you decide to implement this particular strategy, given your project team's specific context? How was the need/goal identified? Which specific EDI barriers does this strategy address? Notes: Relate back to the Analysis of Context section if possible. Consider also that a UBC-based best practice may not be relevant to team members based elsewhere.
- For APPROACH***:*** What steps are involved in implementing your strategy? What is required/in place to sustain it? Is implementation/maintenance feasible? What monitoring mechanisms/feedback loops are in place? Who will review and determine policy changes based on this reporting? How will issues/resolutions

be communicated to the team, and recommendations/improvements be implemented? If relevant, what challenges do you anticipate when implementing EDI strategies across different institutions? Do you have an EDI champion and/or committee? What are their roles?

- For EXPECTED IMPACT: What are your expected (hoped for) outcomes? What short-/medium-/long-term impacts are expected? How will they be measured? How will you know implementation was successful?

TEAM COMPOSITION AND RECRUITMENT PROCESSES section

Specific Suggestions

Focus these best practices on the "diversity" portion of EDI: Target best practices that centre on diversity to minimize overlap and confusion between the other two sub-sections. Note: NFRF defines diversity "as differences in race, colour, place of origin, religion, immigrant and newcomer status, ethnic origin, ability, sex, sexual orientation, gender identity, gender expression and age."

Sentence prompt: "Key Best Practices [are already]/[will be put] in place to ensure transparency in the selection of new team members, and an equitable and diverse recruitment process overall. These include: [select two or three examples relevant to your situation from the list of suggestions below]."

- "requesting application materials without personal information (e.g., name, age, sex, gender, ethnicity, photo) to avoid unconscious bias, plus an additional filtering step performed by a designated team member not involved in the evaluation process to remove any remaining identifying details"
- "objective review and scoring of cover letters and CVs using a pre-set scoring system focused on education, technical expertise and relevance of skillset"
- "assessment of candidate qualifications and abilities based exclusively on active work periods, without penalty for career disruptions"
- "review of candidate applications by faculty and trainee team members to ensure a diverse evaluation"
- "availability of telephone/Skype interviews for candidates unable to attend in-person"
- "interviewed by at least two individuals of different genders and ethnicities to eliminate potential biases"
- "pre-set interview questions with objective criteria to enable consistent, reliable scoring by panel members"

TRAINING AND DEVELOPMENT OPPORTUNITIES section

Specific Ideas/Suggestions

Focus these best practices on the "equity" portion of EDI: Target best practices that centre on equity to minimize overlap and confusion between the other two sub-sections. Note: NFRF defines equity "as the removal of systemic barriers and biases enabling all individuals to have equal opportunity to access and benefit from the program."

Sentence prompts:

- "I am currently working to build my own competencies in the area of EDI through workshops provided by UBC's Equity & Inclusion Office: [e.g., "Community Building Education: Diversity and Inclusion at UBC", "Speak Up! Community-Building with Respect", "What's In a Name? Navigating Mispronunciation and Misgendering with Grace"]. I aim to acquire new, more inclusive practices that I can model for my trainees and integrate within my research environment."
- "As team and project leader[s], [I/we] are committed to conducting regular team check-ins that focus on individual and team well-being, as well as research activities. To date, this approach has enabled us to address issues such as [X] and [Y], using respectful and open-minded strategies for reaching appropriate and practical solutions."
- "To prepare this NFRF submission, all team members reviewed the Canada Research Chair "Best Practices Guide for Recruitment, Hiring and Retention" and completed the corresponding "Unconscious bias training" module. Both resources were invaluable for informing our team's recruitment practices which have now been revised to ensure they are open, transparent and aligned with best practices. Key additions include: [select two or three examples relevant to your situation]."

INCLUSION section

Specific Suggestions

<u>Focus these best practices on the “inclusion” portion of EDI:</u> Target best practices that centre on inclusion to minimize overlap and confusion between the other two sub-sections. <u>Note:</u> NFRF defines inclusion “as the practice of ensuring that all individuals are valued and respected for their contributions and equally supported.”

<u>Sentence prompts:</u>

- “Team leaders are committed to holding regular team meetings as well as social gatherings. Team building exercises will be utilized to promote inclusion and support for all team members, including underrepresented members.”
- “Quarterly anonymous surveys will be used to gauge the level of inclusion and integration experienced by team members. I will solicit input and advice from the Equity lead in my Faculty on how best to resolve any issues that may arise.”
- “Our team is committed to creating an environment in which all members feel respected, welcomed and supported. For instance, …”

Support of ECRs

NFRF LOI Instructions: Explain how ECRs will be included in the team and integrated in a meaningful way, including plans to support their leadership and development throughout the project.

NFRF Additional Convergence Portal Instructions: Applicants must consider the type of research environment they will establish as research leaders who are responsible for leading, training and mentoring their team members. As well, applicants must demonstrate a strong commitment to the meaningful integration of ECRs in the project team, with concrete measures put in place to support their integration and leadership development.

Self-identifying / self-identity in the context of the ECRs section – which must be avoided – is anything that might identify the personal information (e.g. age, gender, Indigenous identity, disability, or racial background) of anyone participating in the proposed research project. Therefore, you may include information that reveals the affiliation of team members (including departments, lab groups, etc.), but not that reveals their personal information (including their name).

Provide a description of how ECRs will be included in the team and integrated in a meaningful way, including plans to support their leadership and development throughout the project.

Maximum character count: 3500

NFRF Selection Criterion: EDI is a core element of the NFRF program. In the context of the Transformation stream, the EDI criterion also includes consideration of ECRs.

NFRF "Pass" Definition for Key Element from Evaluation Matrix:

- ***Integration of ECRs*:** ECRs are included in the team and integrated in a meaningful way. Plans are in place to support leadership development throughout the project.

Overall Suggestions

Headings: "INCLUSION AND INTEGRATION" and "LEADERSHIP AND DEVELOPMENT" are suggested as headings to organize content and convey to reviewers that the requirements have been met. Consider CAPITALIZED HEADINGS because formatting is not possible in text boxes.

Expertise details can be included without disclosing EDI-type personal identity information: Indigenous and other research expertise can be discussed even though Indigenous identity, etc. may not be mentioned. For example: "Dr. ABC is an expert in XYZ at UBC" (vs. "Dr. ABC, a female, is an expert in XYZ at UBC").

Incorporate key terms: "Early Career Researcher(s) (ECRs)", "meaningful inclusion", "integrated meaningfully", "leadership development", "support", etc.

Possible INCLUSION AND INTEGRATION section

Specific Suggestions

Tailor content based on the number of ECR team members: For teams with a single ECR, provide justification for this decision. For teams with >1 ECR, leverage your 'ECR cohort' to propose novel support strategies.

Consider how ECRs will champion new ways of conducting research: For example, they may contribute new research perspectives and strategies for thinking 'outside the box', share new tools and methodologies, and be adept at using cutting-edge equipment.

Present your ECR training/mentoring philosophy: If you do not have a philosophy specific to ECRs, adapt the one used for trainees/students/visiting scholars (i.e., the next generation of researchers).

Consider ECR training of students and mentoring of postdoctoral fellows: Propose a formal plan for these activities within the context and time frame of the proposed project.

Include an evaluation and improvement plan: Describe how you will monitor the progress and success of your ECR inclusion/integration strategies. Include concrete milestones/deliverables and measures.

Provide concrete evidence: Share challenges and success stories to convey your commitment to your ECR strategies. Describe your track record, including past mentoring successes/training achievements (e.g., mentorship awards, training grants) and specific numbers where possible (e.g., # of ECRs trained).

Lay groundwork at the LOI stage for information required in the Full Application: Provide initial, high-level management/training plan details (e.g., integration and development of ECR team members) since three pages on the topic are required at Full Application.

Questions to consider as you draft content:

- What factors are important when creating an inclusive environment for junior colleagues?
- How will an ECR's career trajectory over the six years of the Transformation Grant be supported by their involvement in a transformative and interdisciplinary project?
- Will the number of ECRs involved in the project change over the six-year period? If yes, explain/justify.
- Can you demonstrate that your ECRs are integral to the project team, rather than "add-ons"? Demonstrate how ECRs are integral at all stages (e.g., project design, implementation, outcomes/success).
- What added value does the ECR bring to your project/team (e.g., unique expertise, experiences, background)? How does this value justify their distinct, defined role(s), and provide evidence of the essential and concrete contributions they are expected to make?
- Can you distinguish the roles and contributions of your ECRs from other (more established) team members and trainees? Note: If ECR expertise overlaps with that of more established team members, justify this 'overlap' with a formal mentoring plan, including expected bi-directional benefits.
- How will you ensure success, monitor progress, measure success, address challenges and implement improvements? How will you determine if your ECR inclusion/integration strategies are working?

Possible LEADERSHIP AND DEVELOPMENT section

Specific Suggestions

Reference formal (i.e., documented) processes/procedures, as available: Highlight leadership development, orientation and training/mentoring reports/policies/etc., plus other resources such as trainee Independent Development Plans for assessment, planning and goal-setting (e.g., NIH Office of Intramural Training & Education, Individual Development Plan for Postdoctoral Fellows, Science Careers Individual Developent Plan). Note: These may exist at multiple levels (e.g., central, Faculty/Dept., Centre/Institute/unit, research group/lab, team members' professional networks). Other resources can be found at UBC's VP Academic/Provost webpage on faculty mentoring.

Articulate your mentorship/training plan: This could include: **(a)** training goals, learning opportunities, key activities; **(b)** mentoring/training approaches related to the project/research field(s); **(c)** rationale for the proposed approach; **(d)** potential challenges, with a strategy to identify and mitigate them; **(e)** progress and success measurements (including measures that go beyond traditional academic production). For teams with an ECR NPI, provide rationale for why the ECR was chosen to lead above all other team members.

Include project-specific training and skill development details: Describe relevant instrumentation and study design/analysis requirements, plus general research (e.g., grant writing, ethics, presentation), academic career (e.g., teaching, mentoring, networking) and general career (e.g., interviewing, lab management) requirements.

Highlight unique training elements/approaches: Include components such as interdisciplinary internship opportunities, cross-national mentoring and knowledge translation training to stand out from your competitors.

Questions to consider as you draft content:

- What leadership, and research and career development guidance and support can the NPI and other team members provide to ECRs in the realms of academics/research and professional/career?
- With >1 ECR on the project team, what opportunities exist to provide leadership/development training/mentoring to your 'ECR cohort' in both academic/research and professional/career areas?
- How will you build ECR capacity and position them for successful research careers?