TIPS: CFI – INNOVATION FUND 2025

STREAM 3

Research Services Office

This guide applies to STREAM 3 (core facilities) applications only. If you are applying to STREAM 1 (open) or STREAM 2 (social sciences, humanities and arts) please consult the *CFI-Innovation Fund 2025 STREAMs 1 and 2* document on the funding opportunity page.

1.OVERVIEW

The Canada Foundation for Innovation (CFI) Innovation Fund (IF) program defines a threshold of excellence, based on expert reviewer ratings of five assessment criteria (see page 9 of the CFI-IF 2025 Call for Proposals for definition). Only those applications that meet this threshold in the first stage of review (Expert Committees) will move on to the next review stage (Multidisciplinary Assessment Committee).

This document provides applicants with tips and strategies to build a strong and persuasive proposal that meets and exceeds the threshold of excellence. The document should be read in conjunction with the Call for Proposals and the CFI Policy and Program Guide.

2.GENERAL TIPS

SUCCESSFULLY FRAMING YOUR CFI IF PROPOSAL

The Research Services Office has conducted reviews of the comments of the Expert Review Committees in recent IF competitions and identified common characteristics of successful proposals that you can consider as you construct your application:

Sufficient, relevant detail: Applicants need to balance readability with a level of detail that permits reviewers to assess whether the standard for each criterion has been met. This requirement applies to all sections of the proposal. Committees have noted that "generic" responses and a lack of details/clarity prevent an effective determination of the extent to which applicants meet the stated category criteria. The committees were not merely requesting longer responses but asked that applicants provide the **relevant** and **concrete details** that would allow them to determine the degree to which the criteria are satisfied.

A well-integrated project: The core facility and proposed research activities should be clearly linked to one another. This expectation applies within objectives/criteria—research activities enabled by the facility should relate clearly to research aims, for example—as well as across objectives/criteria: the team's expertise should clearly relate to the requested infrastructure, and the research outcomes and benefits should flow clearly from the infrastructure and its use. Reviewers are looking for **cohesion across the proposal** and a sense that the proposal represents a unified program.

An innovative research program: The CFI seeks to support core facilities that enable innovative research programs or technology development – that does not mean the requested infrastructure must itself necessarily be innovative or leading edge. The infrastructure should be essential and necessary; the programs of research enabled by the proposed core facility should be innovative.

Project maturity: The project should be of appropriate maturity and offer the best potential for achieving a transformative impact; it is expected that projects will be finalized promptly and completed within a reasonable time frame (see project completion expectations on page 5 of the Call for Proposals).

FORMATTING & STYLE

Not all reviewers will give your application an in-depth review. Good formatting will allow them to locate the information they need and will create a favourable first impression for your proposal.

- Throughout the application, choose a logical heading system (mimicking the headings/language/ terms used in the instructions).
- Avoid lengthy paragraphs and use bulleted or numbered lists whenever appropriate.
- Use persuasive and optimistic language. Do not say that you *hope* something will happen—say that it *will* happen. Do not say that the research will *progress smoothly*—say that it will *break new ground*. Emphasize innovative aspects.
- References to past successes and achievements need evidence. Claims of excellence will not seem credible to the reviewers if you do not provide concrete examples. Stick to examples that are relevant to the proposed research or technology development program.
- Write new material whenever possible and customize existing material to fully address the IF criteria. Reviewers can easily tell when material has simply been cut and pasted from a previous grant application.
- Avoid copying and pasting the same passages into different parts of the application. Some information and key ideas will be mentioned more than once, but you should not repeat identical sentences and paragraphs.
- Figures and diagrams may be included in Assessment Criteria attachments. Be sure that figures and images are clearly labelled and are legible.

Your proposal attachments must adhere to CFI's page formatting guidelines. Please consult section 6.2.2 of the Getting Started with the CFI Awards Management System (CAMS) for Researchers document.

3.PROJECT SUMMARY

The project summary provides a general description of the proposed creation, renewal or upgrade of a core facility and the requested infrastructure. The project summary is the only section of the proposal the CFI will provide to the Special Multidisciplinary Assessment Committee to help with its deliberations, so the summary must concisely and persuasively explain how the proposed project meets the three competition objectives (described in more detail below). Consider writing the summary after you have completed writing the Assessment Criteria.

- First impressions count! Write an opening paragraph that outlines the broad vision for the core facility, the role of the requested infrastructure in realizing that vision, and why the research or technology development that will be enabled by the facility is important to Canada.
- Use language appropriate for a multidisciplinary committee. Avoid abbreviations and jargon.
- Present a clear focus—especially when there is a list of projects involved—and a clear outline of issues to be addressed. Demonstrate that this is a cohesive project.
- Describe the requested infrastructure in short, bulleted paragraphs: **what it is, what it does, and why it is important**. Reviewers want to quickly see what it is you are requesting.

- Clearly address all three competition objectives; make sure that each objective is easily identifiable and that there is a clear explanation of **how** the proposed facility and related research or technology development address each of these objectives.

4. ASSESSMENT CRITERIA

Proposals should clearly present the merits and excellence of the proposed project and provide sufficient information to enable reviewers to evaluate the proposal in accordance with **the five criteria and the three objectives** of the 2025 Innovation Fund. Suggestions on how best to address each of the objectives and criteria are provided below.

OBJECTIVE 1: Enable internationally competitive research or technology development through the equitable participation of expert team members.

This objective emphasizes the competitiveness of the core facility and the research or technology development programs it will enable in the global context, while putting a strong emphasis on the team's commitment to equity, diversity, and inclusion (EDI) in both the design of the research or technology development methods and in the research environment.

Assessment criterion: Research or Technology Development

This section allows you to describe the proposed core facility at length and to excite the reader about its potential. A running theme of the application should be that the new infrastructure is absolutely essential for providing state-of-the art research services and analyses, access to instruments and technologies, and/or access to expertise and training that will enable a broad research user base to conduct internationally competitive research or technology development.

EDI in research design should be considered for every proposal and should be meaningfully addressed throughout this section as you describe research methods enabled by the core facility. These can include areas such as research planning and design, literature search, and data collection and analysis, among others (see page 17 of the Call for Proposals. While EDI principles may not be applicable to some proposed research, applicants are encouraged to fully consider their research through an EDI lens and consider the type of data and information that will be collected and the people and communities that will be impacted by the research outcomes. If EDI principles are not applicable to the proposed research or technology development, be sure to provide a persuasive rationale.

Consider structuring this section as follows:

Introduction

- Set the stage by outlining the overall vision of the core facility. What are the gaps in research services, technology, expertise and/or training you are seeking to address? How will your core facility fill those gaps? And why is it necessary to address these gaps now? Convince reviewers of the significance of the gaps and of the possibility of filling them through the core facility.
- Include a link to the facility's website (if applicable).
- Provide a list/summary of major infrastructure items before describing the facility. This overview may make it easier for reviewers to follow the proposal and see the connection between the requested items and the research activities.
- Describe the short- and long-term **objectives** of the core facility. Provide a high-level description of the types of projects the infrastructure will enable. Outline the role the requested infrastructure

will play in enabling these projects and how the resulting research or technology development will be transformative

- To emphasize that research programs enabled by the facility will be **innovative**, use phrases such as:
    - "[X] will be the world's premier centre for the research and development of . . ."
    - "The work will lead to breakthroughs in [Y] by . . ."
    - "The facility will bring together the key strengths of . . ."

Proposed Research: Feasibility

- Discuss the current state of knowledge and the pressing questions the research or technology development enabled by the facility intends to address. Be sure to include key references (note that references are included within the maximum number of pages).
- Discuss the present research opportunities and how the proposed facility will support and enhance them.
- Describe a select list of projects that will be enabled by the facility in more detail to demonstrate the breadth of research activity that will be supported. Specify **strategies** and **key activities**, including methodological approaches and procedures for data collection and analysis. Justify the selected approaches/methodologies that will be enabled by the core facility.
- Clearly tie the research activities to the requested infrastructure—be sure to discuss how the requested infrastructure will be used.
- Describe the network of users and collaborators who will benefit from access to the facility. Will there be non-academic research users?
- Set realistic timelines for research activities and outcomes. If commercialization is a part of a technology development program, establish a clear commercialization path and ensure that the timeline is credible.
- Address any anticipated challenges as well as the strategies for meeting such challenges.
- Describe the ways in which the proposed research or technology development programs are well rounded and/or take a multi-faceted approach.
- If the facility and related projects bring together interdisciplinary researchers, explain why an interdisciplinary approach is appropriate and valuable.

Proposed Research: Innovativeness

- Discuss how the facility and proposed programs of research are innovative. This argument should be convincing both to the members of the expert review panel, with specific knowledge of your field, and to the multidisciplinary committee, composed of non-specialists.
- Demonstrate the high potential for breakthroughs in the field deriving from research that will be enabled by the facility.

Proposed Research: International Competitiveness

- Compare core facility and research and technology development programs enabled by the facility to similar facilities and programs nationally and/or internationally and discuss what distinguishes the facility or research programs from these others, emphasizing what makes yours new and cutting-edge. (E.g., "We are currently the only team in the world investigating [Y]," or "Although research in the field of [X] has been done before, this would be the first time that...") Make a case for the uniqueness and the international competitiveness of the facility and the proposed research or technology development. Include references.

- Describe how the requested infrastructure and the proposed facility will position Canada as a global leader in this field.

Timeliness and Impact

- Address the timeliness of the proposed facility creation or upgrade (why undertake this research or technology development now?) by showing how the infrastructure is essential to exploit new or expanded opportunities.
- Demonstrate the potential impact of the work enabled by the facility for the Canadian economy and society. Are there any applied uses for the proposed research or technology development? Is Canada lacking knowledge or technology in this area?

Common Weaknesses Identified by Reviewers

- The description of research methods lacked specificity/detail and did not address innovativeness, making it difficult for the committee to assess the feasibility or the potential for breakthroughs.
- The program is too broad/spans too many areas to be feasible.
- The proposal required more detail on the current state of the field and the international research context.
- The proposal did not clearly outline the motivation, key questions, objectives, and hypotheses.
- The committee questioned the feasibility of the proposed facility design.
- The proposal did not address potential research challenges and did not include a contingency plan.
- Plans for scaling up the proposal (where appropriate) were not described sufficiently.

Assessment criterion: Team

In this section, persuade reviewers that your diverse team has all the necessary expertise to enable multiple research or technology development activities. Integration is a key element of the CFI IF program, and the team should be well integrated; ensure that you discuss your track record working as a team and how you will collaborate with all the partners.

In this section, reviewers will also assess the consideration of EDI in your team composition and research environment. Persuade them that you have considered existing systemic barriers and implemented policies and practices to overcome them by using concrete examples and describing the specific actions and steps you have taken.

Breadth of Experience and Expertise of the Team for the Proposed Program

- Focus on the skills and accomplishments that you and your teammates bring to the core facility that are essential for its success and that will enable the research or technology development programs of the facility's users. Explain why you and your teammates are **optimal users** of the infrastructure. Avoid including CVs of people who will not use the infrastructure.
- Describe the expertise that is required to enable and support projects and research activities that will be conducted within the core facility, and explicitly link team members' areas of expertise to specific research activities. Include a matrix/figure matching each team member's expertise with the proposed research activities.
- Describe the team members' expertise and experience through both traditional and non-traditional outputs. (See pages 17 and 18 of the Call for Proposals).
- Discuss the team's previous experience using the requested equipment.
- Describe team members' experience supporting core facilities, working in research networks, managing large projects, and working with industry.

- Describe team members' experience in knowledge mobilization, technology transfer, and commercialization.
- Discuss both current and recent collaborations among the team members, and describe successful projects completed as a team. State how this proposed program of research will build on prior/existing collaborations and will enhance synergy among team members.
- Briefly outline any other relevant collaborations/partnerships. Be specific and name collaborators/partners within and outside the University (other researchers, industry, public sector networks, etc.) and describe the degrees of collaboration (informal exchanges, co-authorship, formal signed agreements, etc.).
- Collaborations must add real strength—quality, not quantity. Explain how all collaborations will contribute to the ability of the core facility to successfully enable the proposed research or technology development programs.
- Include a plan to maintain cohesion with the group (e.g., teleconference calls, in-person progress meetings, communications tools), and describe how the facility director will work closely with other team members, partners, and collaborators to ensure the successful management and operation of all aspects of the facility

Equity, Diversity, and Inclusion Considerations in the Team and Research Environment

- Describe **systemic barriers** that exist in the context of your research program or discipline(s). Systemic barriers are defined as policies or practices that result in individuals from under-represented groups having unequal access to, or being excluded from, participation or benefits. Keep in mind that systemic barriers can be unintentional or seemingly "invisible," but they still have impacts that reproduce inequities.
- Some examples of systemic barriers include the following:
    - The impact of unconscious bias in recruitment/hiring and peer review
    - An unwelcoming or hostile research climate and culture
    - Narrow definitions of excellence that undervalue emerging areas of research, non-traditional scholarship, or Indigenous ways of knowing
    - Inequitable access to research, training, and career development opportunities
    - A lack of role models/mentors for students, trainees, and junior faculty members from underrepresented groups
    - Exclusion from networks, particularly informal networks
    - Physical, sensory, and other barriers experienced by researchers with disabilities
    - Disproportionate service burdens faced by faculty members from under-represented groups
    - Isolation, microaggressions, and stereotyping for those who are especially under-represented in their department or discipline
    - The "hidden curriculum" in research (norms, practices, unwritten rules), which can be exclusionary
- For more information on systemic barriers, please consult the "Additional Resources" section of the VPRI handbook on EDI in Research Team and Training.
- Next, describe **specific actions and steps** that you have implemented and will implement going forward to address these barriers. Tie these actions to the barriers described above—make the connection clear for the reviewers.
    - Describe **concrete practices** that enable the full participation of individuals from under-represented groups and early career researchers (e.g., practices related to team composition and the recruitment of HQP).

  - Identify **concrete practices** that you will take to provide an equitable, inclusive, and accessible working environment, and describe how you will implement these practices given the challenges or systemic barriers you have described.
  - Describe how you will assess the impact of these actions and practices (how you will determine if they are working).
  - For examples of concrete practices, please consult the VPRI handbook in EDI in Teams and Training and page 18 of the Call for Proposals.
- **Do not** include demographic or identifying information about team members—remember that EDI is not a counting exercise. Instead, describe the steps the team has taken to engage members of under-represented groups and address systemic barriers. When addressing EDI in team composition, you could discuss the following:
  - How inclusive definitions of excellence were used in assembling the team (e.g., excellence in mentoring, outreach, and service; recognition the value of diverse methodologies and research impacts; consideration of leaves or non-linear career paths).
  - How the team considered both traditional and non-traditional outputs when assessing team members' research expertise. (For a description of both types of outputs, please see pages 17 and 18 of the Call for Proposals.)
  - Any outreach to or engagement with prospective team members, noting how these efforts were attentive to diversity.
  - How EDI has been addressed in the team's governance or decision-making structure.
  - Various team members' demonstrated experience or competency in equity, diversity, and inclusion. At the same time, be sure to emphasize that **all** team members will be responsible for fostering an equitable, diverse, and inclusive research environment.
- Avoid general or high-level statements about EDI and move directly into the discussion of the concrete practices. As indicated in the Call for Proposals, it is insufficient to rely exclusively on institutional guidelines and policies for EDI. Instead, you should describe plans that are specific and tailored to the context of your research team and discipline.

Common Weaknesses Identified by Reviewers

- The team needed additional expertise for the requested infrastructure, or there was mismatch between team expertise and the proposed core facility.
- The synergy of team members and across research topics or themes was not well described.
- The proposal required more detail on the role of each group member and the involvement of end-users and partners.
- The proposed core facility would be stronger with additional research collaborators and/or more collaboration with end-users and the private sector.
- The team's CVs were not up to date, leading reviewers to question the level of engagement and whether the team had sufficient expertise to support the research activities of the proposed users.
- Descriptions of EDI practices were generic or were lacking in detail.

OBJECTIVE 2: Enhance the capacity of institutions to conduct the research or technology development program over the useful life of the infrastructure.

In this section, convince reviewers that the requested infrastructure is an excellent investment for the success of the research programs that will be enabled by the core facility and that it will be used and maintained over its full lifespan. Emphasize how the infrastructure is **essential** for the proposed programs; how it enhances the current research ecosystem of people and infrastructure; and how it will be effectively operated and managed.

Assessment criterion: Infrastructure

Provide a detailed justification for each item of the requested infrastructure to make the case that it is **essential** for the core facility and the proposed research or technology development that will be supported by the facility. Note that in previous CFI-IF rounds, some applications received partial funding when individual budget items were considered insufficiently justified. Ensure that all requests are presented as essential. The following structure is one way to present the information:

Overview

- Open this section with a short overview of your overall infrastructure requirements (including items supported from other sources) to provide context.

Description of the Infrastructure

- Group the items together by lab/facility, category, or suite, and label each item exactly as it appears in the *Cost of Individual Items* table in the Finance Module. Present a clear justification for each item (or group of items).
- As you describe the infrastructure, describe what each item is and what it does. Refer to the relevant research or technology development activities described in the "Research or Technology Development" section to explain why the infrastructure is needed in the context of the proposed core facility and research programs.
- Provide a matrix or figure matching the requested items with the proposed research activities.
- Demonstrate that the requested infrastructure will position core facility users and collaborators to achieve scientific breakthroughs and will allow researchers to be internationally competitive.
- Make a solid case for **appropriateness** of the requested infrastructure. Demonstrate that the best tool for the task has been selected and that the equipment is ideal for the research or technology development described. In cases where you have a choice of makes or models, explain why you have selected these particular options.
- If an item is an integrated system with multiple components (i.e., one for which the vendor supplies a single quote for the entire working assemblage), describe and justify the system in terms of both the necessity of each of the components for effective functioning and the necessity of the system as a whole.
- Specify the location for each major part of the infrastructure (especially for multi-site applications). For multi-site applications, explain how different facilities/laboratories will be integrated and how communication between them will be maintained.
- Explain how the requested infrastructure will be integrated into existing facilities and how it will augment the existing capabilities of the facility's users and the institution. If the equipment will be located offsite, provide a clear rationale.
- In cases in which the applicant(s) has/have previously received CFI funding, describe the value that will be added by a further award.
- You may name a specific equipment vendor and equipment model, but the CFI review will treat it as indicative of the research functionality required by the research. CFI will expect the eventual purchase to result from a competitive tendering process—and that might not be the vendor cited in the proposal.

***(Note:* For construction or renovation, details must be provided in a separate document as part of the Finance Module.)**

Availability of Similar Infrastructure

- Explain why the infrastructure needs of the core facility users cannot be met elsewhere by making the case for the distinctiveness of the infrastructure or the establishment of a unique research or technology development capability at U of T, within the region (southern Ontario/GTA), or in Canada.
- If the infrastructure is not unique within the University or in southern Ontario, make a persuasive case as to why existing infrastructure cannot be used. Briefly describe similar infrastructure available locally and describe why it is not accessible or appropriate/adequate for the proposed research or technology development programs (for example, if it is already at full capacity or cannot be integrated with other equipment in your lab or site).
- Describe how the infrastructure will increase institutional capacity and enhance global competitiveness. Describe how the requested items will integrate with the existing infrastructure capacity at U of T and at partner institution(s).
- Indicate if the requested equipment will complement other infrastructure available locally and how it will fill a gap in existing facilities.
- If proposals are going forward in similar areas at U of T, demonstrate that the other proposals do not overlap with yours. If there is significant overlap, you should consider whether there is merit in combining the proposals.

Common Weaknesses Identified by Reviewers

- The requested infrastructure/personnel were not well justified.
- The requested items were not appropriate to the proposed core facility.
- The proposal required more detail regarding the need for the specific features/capabilities of the infrastructure as well as how the requested items will be used and will enable innovative research.
- The proposal did not address the duplication of existing infrastructure, fully leverage existing equipment, or describe the integration of requested infrastructure with complementary facilities at U of T.
- Some potential difficulties and technical demands of the infrastructure were overlooked and not addressed.
- Safety measures were not adequately described.
- The proposal did not mention the research and/or technical staff required to support the requested infrastructure.
- The infrastructure costs were exaggerated.

Assessment criterion: Sustainability

Provide details about your management plan (including data management), governance structure (if applicable), and operating and maintenance (O&M) costs.

Optimal Use

- Outline roles and responsibilities for implementation (e.g., initial planning, design, renovations, installation) and operations (e.g., guidelines for user fees, access, scheduling, training).
- Demonstrate that the infrastructure will be fully used through access by internal and external users, by diverse collaborative researchers, and/or by strong partnerships.
- Describe the basic operations associated with this infrastructure. For example, explain the implementation plan, the usage policy, the day-to-day oversight and operation of equipment, the required training, the need for experimental assistance, etc.

- Explain how the infrastructure will enable research across several disciplines or will create research or technology development opportunities outside of the originally proposed research programs.
- Provide an access plan that describes how the requested infrastructure will be made accessible to the proposed users and to other Canadian researchers.
- Describe evidence-based actions you will take to ensure access to the infrastructure is equitable and inclusive. These practices might include:
    - Establishing an independent access committee
    - Ensuring that allocation or availability is transparent and providing flexibility or accommodation in scheduling
    - Ensuring that early career researchers and HQP (as appropriate) have access to the infrastructure
    - The accessibility of the infrastructure and the facility or location, and offering accommodations for users with disabilities
    - Creating a code of conduct for the facility/location and ensuring that lab managers and technicians have received training on topics such as unconscious bias, anti-racism, microaggressions and harassment

Management Plan

- Describe how the infrastructure will be operated and maintained **over its useful life**.
- Identify the facility director and outline this individual's responsibilities.
- Describe the responsibilities of other members of the management model (e.g., associate directors, project manager, lab manager, representative for team members).
- If applicable, mention the professional management structure already in place in your facility, including business managers and staff who have experience managing/booking access to the facility/equipment, ordering equipment, coordinating installation, arranging work orders, etc. Describe how this staff will work with the director or associate directors.
- Describe the user fee policy for the facility.
- Highlight team members' experience managing facilities, large-scale projects and infrastructure.
- Provide a data management plan that describes how users' data will be securely and ethically managed. Describe how you store and analyze data, how you will share data, and how you will preserve data after the project has ended. For more information on data management, refer to the Centre for Research Innovation and Support (CRIS) Digital Research Infrastructure (DRI) Portal.

Governance Structure

- Describe the proposed governance structure for the requested infrastructure.
- Indicate who will be included on the different decision-making bodies.
- Include a diagram or figure, if appropriate.

O&M Needs and Costs

- Include the expected lifespan of the infrastructure.
- Provide an annual budget for the costs of supplies, maintenance, personnel, a contingency fund, etc. Include a breakdown of costs or a rationale for these estimates. Ensure that these costs **exactly** match the costs in the *Operation and maintenance budget summary* table in the *Financial Resources for Operation and Maintenance* section of the *Project Module* on CAMS.
- Outline the basic service needs of the infrastructure equipment and list any necessary supplies.
- Describe the plans for safety and any necessary permits and safety training.

- List the staff who will be performing or overseeing the operations and maintenance (e.g., lab manager, lab technician, research assistants) and describe their roles and responsibilities. Include their anticipated salaries.
- Indicate who will be performing general equipment repair and/or technical support.
- Include information on warranties or service contracts and describe how repairs will be funded after a warranty ends. Mention if service contracts are transferable if the equipment is upgraded.
- Outline the process for determining infrastructure upgrades (e.g., who will make this decision, when will they meet).
- Describe the location where the infrastructure will be housed and, if applicable, describe how the equipment will be integrated into the existing facility. Mention security features already in place.
- Describe the needed security systems and provide their estimated costs.
- If applicable, include a timeline for the development of prototypes and the deployment of newly built infrastructure.

Revenues

- Describe the sources of support for operations and maintenance: discuss both IOF funding and long-term sustainability through other sources. Note CFI expects that the IOF awarded will not normally be sufficient to cover operating and maintenance costs and expects that additional funding will be required.
- Describe plans for cost-recovery through user fees.
    - Include the expected numbers of users and the anticipated revenues.
    - Note if the user fees will generate a surplus and describe how this surplus will be used after IOF funding ends.
    - Mention team members who have experience managing user access and fees.
- Is there a formal facility business plan underlying the cost-recovery policy? Is the cost-recovery flat-rate or differentiated by user, and if so how and why?
- Discuss how additional operating and maintenance costs will be covered by operating grants or external grants. Include the total estimated value of these grants and/or describe the team members' track records in securing such funding.
- Describe institutional commitments for start-up funds, maintenance of space, technical personnel salaries, service contracts, upgrades, or other costs.
- Discuss funding that will be secured through support from industry partners or revenues that will come from licensing agreements.

Justification for Additional O&M Contribution

- If requesting additional O&M contribution, describe the specific additional costs and why they are essential.

Note: Examples of the Sustainability section, including sample text for operation and maintenance needs, sources of support, management structure, and governance structure, are available upon request from the Research Services Office (contact Elizabeth Nguyen, ec.nguyen@utoronto.ca).

Common Weaknesses Identified by Reviewers

- The management plan lacked detail (e.g., management of priority and access to infrastructure, plans for sharing equipment with collaborators, the relationship between lab management and the higher-level management committee).
- The maintenance and repair budget was too low.

- The proposed user fees were not appropriate (e.g., too high, too low, flat fees for equipment with diverse costs).
- The sustainability plan relied in part on user fees, but there were few details about other users, or the projected number of users was overly ambitious.
- Plans for long-term sustainability were not clearly described.
- The infrastructure should be integrated into existing facilities to make use of already available administrative and technical supports.
- It was not clear how infrastructure would be maintained and optimally used across multiple sites.
- The governance plan was not appropriate for the project/team size or number of institutions.
- Because the research program was not coherent/unified, effective collaboration, management, and governance would be challenging.
- Success metrics and plans for long-term sustainability were not clearly described.
- The proposal lacked a convincing explanation of how the project will be scaled up (where appropriate).

OBJECTIVE 3: Lead to social, health, environmental and/or economic benefits for Canadians.

In this section, discuss the benefits of the research or technology development programs that will be enabled by the proposed core facility to Canadians, including knowledge mobilization, training of highly qualified personnel, and socioeconomic, health, or environmental benefits. The pathways from the research and technology development to the benefits should be detailed and specific. The benefits must be convincing to reviewers: they should be significant but seem plausible (supported by evidence), and they should clearly result from the proposed programs. The discussion should include the consideration of EDI principles for people and communities impacted by the research and technology development and the integration of EDI principles in the training and mentorship programs.

Assessment criterion: Benefits

Pathways for Knowledge Transfer

- Describe the plans for the transfer of research or technology development results. The plan should seem feasible to reviewers and should include details about the relevant timeframes. There should be clear and convincing links between the proposed program, team, and pathways for transfer or knowledge mobilization.
- Explain how principles of EDI were considered in the development of knowledge transfer plans.
- Identify end-users, including organizations or companies with which the facility users have already worked. Think outside the university and academia.
- Use the ***Commercialization Boilerplate Language*** below, provided by the Innovation and Partnerships Office (IPO), and refer to UofT's recently published Commercialization Framework as a starting point to describe commercialization plans. Use relevant sections and adapt and modify the text to suit the proposed research activities. Use the ***Economic and Social Impacts of Commercialization Checklist*** provided below to describe the anticipated impact. If you would like assistance in building a commercialization plan tailored to your particular research or technology development, please contact Glaucia Lima (glaucia.lima@utoronto.ca) or Kristy Reynald (kristy.reynald@utoronto.ca) in IPO.
- Discuss team members' previous experience with similar strategies for knowledge transfer. Highlight, as appropriate, the team's proven commercialization record and discuss the applicants' experience establishing companies, filing patents, and licensing technologies. Consider including

Intellectual Property Educational Program resources, freely available through UofT, in your onboarding process for project participants and trainees.
- Provide an R&D timeline that outlines major activities and milestones.

Benefits
- Be concrete and show how the proposed research or technology development programs, enabled by the requested infrastructure, will benefit Canadians. It is fine to begin with background information about the field, but the description must also address the impact of the new work that will be made possible by the infrastructure.
- The benefits should be concrete and feasible—avoid overstatements or generalizations. For example, avoid broad statements such as "The research enabled by our core facility will provide health benefits to all Canadians." Benefits are more convincing if they are specific to the proposed research activities. State instead, for example, "Partners A and B have had input into the proposed research plans. This research will produce output X by [a specific time]; this research output will be used by A and B to produce benefits Y and Z for Canadian society."
- Benefits are not only economic and may also include quality of life, social, health, and environmental benefits. Economic impact can be wealth generation or cost savings.
- When discussing economic impact, use plausible numbers rather than making general statements.
    - Consult the Statistics Canada website or search online for "economic benefit [your research area]." This search may uncover studies—even in other countries—that could be cited.
    - Provide figures for the value of particular industries or sectors of the economy. If possible, list the numbers of people employed and the contribution of this sector to Canada's GDP.
    - Where available, include figures for projected growth of this sector. State how this program of research will allow Canada to capture part of this expanding market.
- State how the IP will attract licensing agreements, create Canadian-based spin-off companies, or create jobs for Canadian highly qualified personnel.
- If the research activities enabled by the core facility have a low potential for commercialization or industrial spin-off, emphasize how the research will enhance or restore Canada's position as a leader in a particular scientific field and how it will allow Canada to participate in major international scientific initiatives or global consortia.

Plan for Highly Qualified Personnel (HQP)
- Explain how the new infrastructure is essential for training HQP. Describe unique elements of the training environment. State how the facility or the research or technology development programs enabled by the facility will create excellent opportunities to train HQP in state-of-the-art techniques.
- If possible, give estimated numbers of HQP expected to be trained.
- Describe the benefits for the HQP themselves. Describe the new knowledge and skills they will acquire and how these skills will prepare them for academic and non-academic careers. Include evidence of shortages of skilled personnel in relevant sectors.
- Demonstrate the team's ability to train HQP in this field. Provide examples of companies that have hired graduates from users' labs in recent years and/or examples of start-ups created by graduates/trainees. If applicable, describe how industrial partnerships will create employment pathways for HQP.
- Describe the EDI practices that have been integrated into your training program. Describe concrete steps and actions, and (as in the *Team* section) connect these practices to the systemic barriers they will address and describe mechanisms to assess their impact. For examples of concrete practices, please see the "Training & Mentorship Opportunities" section of the VPRI handbook on EDI in Teams

and Training.

Commercialization

Boilerplate Language

The University of Toronto (U of T) works with numerous governmental and non-governmental organizations, community groups, non-profit organizations, and over 250 companies at any given time, ranging from small and medium-sized enterprises to multi-national corporations. The Innovations and Partnerships Office (IPO), the central technology transfer office at U of T, helps build successful partnerships between industry, business, government, and the U of T research community. It manages U of T's intellectual property, turning ideas and innovations into products, services, companies, and jobs.

Many of the industry-sponsored research agreements executed by IPO result in licenses to the sponsoring company. IPO executes about 40 licences per year and has 440 active commercialization projects in 2024; most licenses are with Canadian companies, demonstrating that U of T technologies are increasingly being used by Canadian companies to grow and compete in global markets.

U of T is also a global powerhouse in translating research results into patents, licenses, companies, and jobs. The University averages about 160 invention disclosures per year. Over the past 10 years, U of T researchers obtained over 1,000 patents, filed over 800 Priority Patents. In the same period, U of T entrepreneurs successfully created over 650 companies, which collectively raised $3 billion in investment. U of T is among the top 5 university business creators in the world according to the UBI Global World Benchmark Study, a recognition of U of T as a global leader in transforming research for entrepreneurship and prosperity. U of T Entrepreneurship (UTE) is a vibrant entrepreneurial community with 12 startup accelerators, and numerous initiatives and support programs that create, encourage, foster, and grow new companies.

Economic and Social Impacts of Commercialization Checklist (discuss all that apply):

- Create jobs (HQPs)
- Create a start-up company
- Build new partnerships and collaborations
- Brand Canada/Ontario in a specific area
- Improve Canadians' quality of life
- Affect the economy and/or society
- Have a positive effect on human health

Common Weaknesses Identified by Reviewers

- The proposal required clearer, more detailed pathways to knowledge translation and/or commercialization.
- The anticipated benefits appeared speculative.
- The knowledge mobilization potential was low, and the knowledge transfer or commercialization plan was not convincing.
- The timeline for realization of the benefits was not realistic.
- The proposed HQP training was weak (e.g., too few HQP, too many HQP, vague or underdeveloped training plans).

5. FINANCE MODULE

Cost of Individual Items

Below is an example of requested infrastructure for a hypothetical application:

				Eligible costs			
Item #	Type	Item description	Number of items	Cash $	In-kind $	Total $	Date acquired (YYYY/MM) or to be acquired (YYYY)
1	13	Microscopes	2	95,000	25,000	120,000	2023
2	13	Molecular Biology Suite	1	55,000	15,000	70,000	2023
3	20	Lab Renovation	1	60,000		60,000	2022
		Total eligible costs		**$210,000**	**$40,000**	**$250,000**	

- Requested items must be eligible and used for research/technology development (review Section 4.6 of the Policy and Program Guide for examples of eligible and non-eligible costs).
- Note core facility proposals can include the cost of scientific and technical personnel for the operation and management of the core facility. Funds may be claimed for the duration of the main CFI award, and those costs are eligible to be paid from the IOF.
- It is recommended to bundle items into functional groups, especially if the cost of each item is small and together these items serve a similar purpose (e.g., various molecular biology lab equipment can be grouped into one line called Molecular Biology Suite). Likewise, items that are integrated or physically connected and for which there are multiple components should be grouped into a "system."
- "Number of items": Where there is a small number of high-cost items in a group, items should be separately counted (e.g., 2 microscopes = 2 items in the Microscopes group). A group with many low-cost items can be considered as a unit (e.g., 1 Molecular Biology Suite may include a number of basic lab equipment). An integrated system should be listed as a unit, rather than the number of components that comprise the system.
- At the proposal stage, infrastructure costs are intended for the purpose of establishing a realistic overall budget. Acquiring estimates does not constitute a commitment to any particular vendor.
- The cash portion of an item must include taxes (3.41% HST), shipping, installation, and brokerage fees where applicable. Do not include these costs in the in-kind contributions.
- Infrastructure that will be used for dual purposes (e.g., research and clinical use) should have costs pro-rated for its research/technology development use only.
- When estimating costs, factor in any possible fluctuations in foreign exchange rates and prices that might adversely affect the purchasing power of the requested funding. CFI and ORF will not increase their contributions after the project is awarded.
- If you plan to purchase service contracts or extended warranties beyond the standard warranty, they should either be included in the cost of the infrastructure or listed as a separate line item. Note that once the project is awarded, warranties cannot be removed from the budget.
- The CFI accepts service contracts and warranties as eligible costs for existing equipment, where justified.
- The CFI expects advanced research computing (ARC) infrastructure to be housed and managed by the new Digital Research Alliance of Canada (formerly Compute Canada). If you have infrastructure that falls within this category, it is strongly recommended that you discuss and/or develop your

proposal in collaboration with the Alliance prior to submitting the application to the CFI (review Section 4.6.4 of the Policy and Program Guide for examples of systems or resources that are considered ARC). For questions about the eligibility of ARC, please contact CFI-FCI@alliancecan.ca

- Construction or renovation costs are eligible if the project space is essential for the housing and use of the requested infrastructure, or to conduct research (review Section 4.6.2 of the Policy and Program Guide for examples of eligible and non-eligible costs related to construction and renovation). Specify the full cost to renovate the space even if CFI funds are not being requested to cover the entire cost of the renovation. Renovation costs, if not included at the applications stage, will not be accepted as an eligible cost after the project is awarded.
- If the facility space is part of a larger renovation initiative, ensure that the estimated cost to renovate the space is determined separately from the costs for the larger undertaking. An appropriate cost-allocation method should be developed and supporting documents kept on file.
- *"Date acquired or to be acquired"*: If the purchase of an item occurred or will occur over several periods, indicate the first order date. As a result of the length of time for the approval process by both CFI and ORF, availability of funds is not expected until approximately 18 months after the CFI application deadline. Plan the timing of purchases accordingly, especially if renovation of project space is necessary for the housing of infrastructure. Purchases may have been made prior to the submission of the application to CFI, but to be eligible the purchase cannot have occurred earlier than 1 November,2023.
- Successful applicants must adhere to the University's procurement policy (see U of T's procurement website at procurement.utoronto.ca). It is useful to be familiar with the policy and its procedures prior to receiving an award.

In-kind contributions

- Items involving vendor deep discounts or in-kind contributions must be reported at fair market value. The supplier should detail its pricing to specify clearly on the quote and on the invoice the list price, the normal discount and/or educational discount, the CFI discount, and the net selling price (review Section 6.5 of the Policy and Program Guide for definitions and documentation requirements). If reference to a "CFI discount" is not explicitly stated on the quote and invoice, the discount will be disallowed.

- For example:

List price	$500
Normal discount	($20)
Educational discount	($80)
Fair market value (total eligible cost)	$400
CFI discount (in-kind)	($100)
Net selling price (cash)	$300

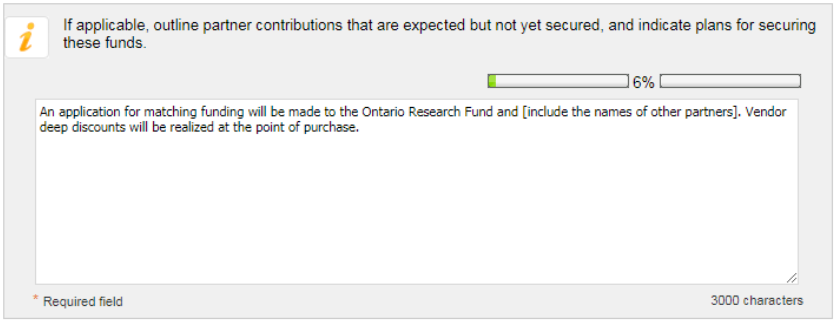
- Vendors that do not offer a normal and/or educational discount should include a statement on the quote and invoice to confirm that any discount applied is specifically offered as a CFI discount only.
- In-kind contributions in excess of $500,000 require a higher level of due diligence to assess the fair market value of the item, which could include a market comparison, a comparison with previous purchases by U of T or other institutions, or an appraisal. This is also the threshold to trigger a Research Security review and will, at a later stage, require the submission of a Risk Assessment Form (RAF).

Construction or Renovation Plans

- The application attachment must include 3 elements:
  - Drawings of the space(s). If there are multiple rooms, ensure the drawings are at the same scale
  - A construction timeline - including design, construction start ('shovel in the ground'), construction completion, and occupation
  - A budget. This may be an estimate from UPD&C, or can be a simpler table for smaller projects, but must include:
    - Construction contractor costs (i.e. actual building/reno expenses)
    - Soft costs (e.g. design and consultancy)
    - Contingency (maximum of 10% overall)
- Ensure that the appropriate faculty/department space and planning office, Capital Projects, or building management have been consulted so that realistic costs and timelines are established at the outset.
- At the time of the CFI application, renovation or construction plans must be developed well beyond the conceptual stage. The CFI requires renovation or construction to start within 18 months of the CFI Board decision date.
- Ensure that timelines are clear and feasible. If timelines do not seem realistic, reviewers may question how delays will affect the early stages of the research (and thus the feasibility of the program as a whole).
- CFI is paying close attention to the planning of project activities to ensure they are realistic and feasible, and that project award finalization occurs within the **nine-month timeline** specified on page 5 of the Call for Proposals. Failure to meet this timeline could result in penalties, including the withdrawal of support for the project.

Contributions from Eligible Partners

Partner name	Partner type	Cash	In-kind	Total	Secured or expected	Delete
Ontario Research Fund	Provincial governments (departments or agencies)	$100,000	$0	$100,000	Expected	✖
University of Toronto	Institutions, trust funds or foundations	$40,000	$0	$40,000	Secured	✖
Vendors/various	Corporations/firms	$0	$40,000	$40,000	Expected	✖



PART 1

PART 2

Part 1

- List all eligible partners (ORF, departmental start-up, vendor deep discounts, etc.) and the type of contribution (i.e., cash or in-kind), but do not include the amount requested from the CFI. The CFI

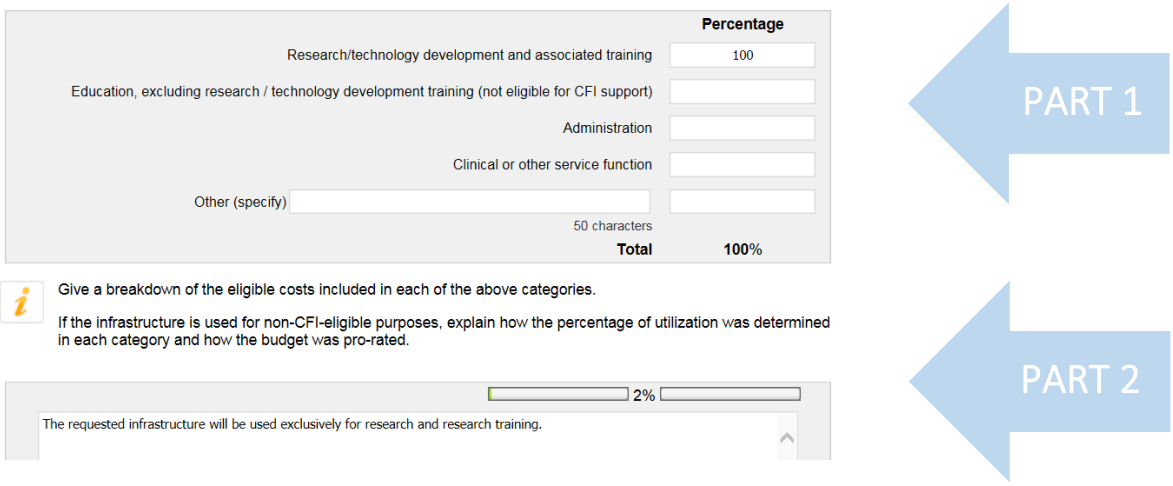
contribution will be calculated automatically from the cash amounts provided for other partners.

- Note that Tri-Council grants and programs cannot be used to leverage CFI funds (review Section 4.8 of the CFI's Policy and Program Guide for a list of eligible and ineligible partners).
- The ORF contribution ("*Partner name"*: Ontario Research Fund Large Infrastructure Fund (ORF-LIF)) should equal the CFI contribution. An application submitted to the province, in which the CFI and ORF requested amounts are not equal, will be corrected by the province to the lower amount.
- Department start-up funds or faculty funds (*"Partner name*": University of Toronto) that will be used as matching should be attributed as a "cash" contribution and "secured."
- Vendor deep discounts of $500k or more should be clearly attributed. Applicants are encouraged to bundle all other vendor deep discounts under a single line called "Various Vendors" and include the total amount under "in-kind."
- Vendor deep discounts from external partners and cash expenditures already made by the department are only eligible if these were received no earlier than six months prior to the CFI application deadline.
- Select *"Expected"* for partner contributions that have not been confirmed or received (e.g., ORF, vendor deep discounts).

Part 2

- Use this section to provide information on partner contributions that are "*Expected*."
- **Boilerplate language**: "An application for matching funding will be made to the Ontario Research Fund and [*include the names of other partners*]. Vendor deep discounts will be realized at the point of purchase."

Infrastructure Utilization



Part 1

- This section captures the use of the infrastructure for CFI-eligible and non-eligible purposes.
- If the items are intended entirely for research/technology development, enter 100% in this line.
- For infrastructure that will also be used for other purposes, the cost must be pro-rated appropriately, and a justification provided for the pro-rating.

Part 2

- In this section, use the following **boilerplate language**, if appropriate: "The requested infrastructure will be used exclusively for research and research training."

6. SUGGESTED REVIEWERS

The list of suggested reviewers is pre-populated using the list provided in the Notice of Intent. You may identify additional reviewers at the application stage. CFI encourages applicants to suggest reviewers with the principles of equity, diversity and inclusion in mind (different career stages, diverse backgrounds, underrepresented groups). Suggested reviewers must not be in a conflict of interest. Reviewers are in a conflict of interest if they fall into one of the following categories:

- Are a relative or close friend, or have a personal relationship with the candidates
- Are in a position to gain or lose financially/materially from the funding of the proposal
- Have had long-standing scientific or personal differences with the candidates
- Are currently affiliated with the candidates' institutions, organizations, or companies, including research hospitals and research institutes
- Are closely professionally affiliated with the candidates, as a result of having in the last six years
  - Had frequent and regular interactions with the candidates in the course of their duties at their department, institution, organization, or company
  - Been a supervisor or a trainee of the candidates;
  - Collaborated, published, or shared funding with the candidates, or have plans to do so in the immediate future; or,
  - Been employed by the applicant institution
- Feel for any reason unable to provide an impartial review of the proposal

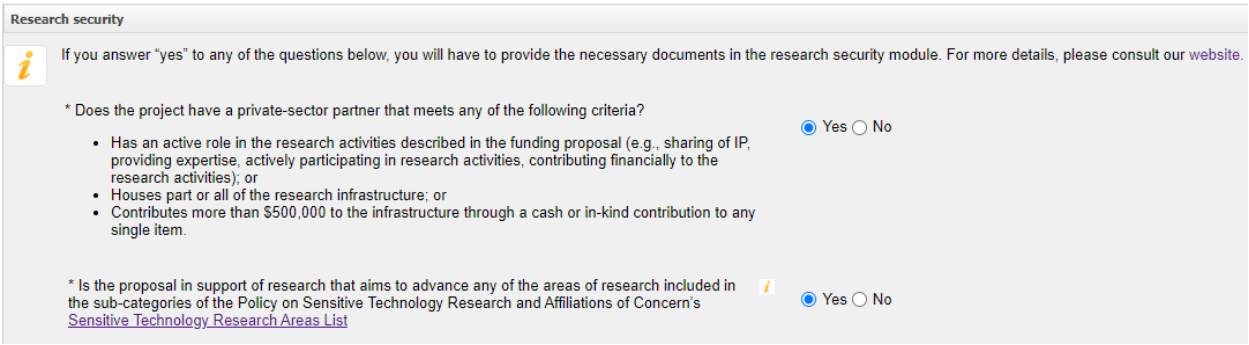
Do not include reviewers who hold appointments at U of T or its affiliated hospitals and institutes. Canada–based reviewers are more likely to have a conflict of interest, so it is recommended that you propose reviewers based outside Canada, which has the added advantage of highlighting the international reach and impact of your research. The decision to use suggested reviewers rests with the CFI.

7. RESEARCH SECURITY

In accordance with new federal research security requirements introduced in the summer, CFI's application process now includes requirements to either affirm that there are no issues to address, or to provide documents addressing any apparent issues.

You are strongly advised to read CFI's guidance on research security, as well as the UofT VPRI's own guidance.

During submission of the Notice of Intent, you will have completed a new *Research Security* module at the end of the *Project Information* page:



If you answered 'yes' to either question, you will have been asked to provide additional documentation.

The first question will require an attestation by the Project Leader; the second question will require completion of the Risk Assessment Form (RAF). Do not click 'yes' for partnerships if the partner contribution is no more than a discount on a purchase price; click 'yes' only if you have a collaborating partner playing an active role in the research.

If you answered 'no' to both questions, no further action is needed.

The *Research Security* module completed in the Notice of Intent will re-appear in the Full Application form, should it need to be amended to account for a change to the team members, partnerships, etc. **Please notify Kevin Hamilton (kevin.hamilton@utoronto.ca) if you make changes to the *Research Security* module at any time leading up to the final sponsor deadline of February 4, 2024.**

Ontario's Mitigating Economic and Geopolitical Risk checklist will be required as part of the Ontario matching funding application.

If you have any queries about federal or provincial research security requirements and how they might apply to your proposal, please contact the VPRI Research Security Team (researchsecurity@utoronto.ca).

Last updated: September 18, 2024