DEVELOPING YOUR 2023 INNOVATION FUND(IF) PROPOSAL

MARCH 2022

INSTITUTIONAL PROGRAMS OFFICE

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IPO WORKSHOP AGENDA

1. CFI Objectives and Assessment Criteria Overview
2. CFI 2023 IF Review Process
3. CFI 2023 IF Assessment Criteria and Common Pitfalls
4. CFI 2023 IF Budget Development Best Practices
5. BC Knowledge Development Fund (BCKDF) Step 1 Application
6. UBC 2023 IF deadlines

CFI 2023 IF OBJECTIVES AND ASSESSMENT CRITERIA OVERVIEW

CFI 2023 IF COMPETITION PURPOSE

- Be aligned with the institution's strategic priorities
- Be of appropriate maturity and offer the best potential for transformative impact
- Allow teams and institutions to build on established capacity to accelerate current research and technology development or to enhance emerging strategic priority areas
- Enable teams to fully exploit research infrastructure and drive world-class research

2023 IF: OBJECTIVE 1 AND CRITERION STANDARDS

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

RESEARCH OR TECHNOLOGY DEVELOPMENT
The research or technology development program(s) are innovative, feasible and internationally competitive.

TEAM EXPERTISE
The team comprises the breadth of experience and expertise needed to conduct the proposed research program(s).

TEAM COMPOSITION
Principles of equity and diversity were considered in the team composition including in its leadership. There is a commitment to create an inclusive environment where all team members are fully integrated and supported in the research team.

2023 IF: OBJECTIVE 2 AND CRITERION STANDARDS

Objective 2: Enhance and optimize the capacity of institutions and research communities to conduct the proposed research or technology development program(s) over the useful life of the infrastructure

INFRASTRUCTURE

The requested infrastructure is necessary and appropriate to conduct the proposed research program(s) and optimally enhances existing capacity.

SUSTAINABILITY

The infrastructure will be optimally used and maintained over its useful life through tangible commitments.

2023 IF: OBJECTIVE 3 AND CRITERION STANDARDS

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

BENEFITS

The team and its partners have a well-defined plan to transfer the results of the research or technology development program(s). The results are likely to lead to social, economic, health or environmental benefits for Canadians.

CFI 2023 IF REVIEW PROCESS

2023 IF: REVIEW PROCESS

Stage 1: Expert committees

- Review small groups of related proposals
- Assess strengths and weaknesses in relation to **six assessment criteria**

Stage 2: Multidisciplinary Assessment Committees (MACs)

- Review groups of proposals of similar size and / or complexity
- Assess on the basis of **three competition objectives**
- Establish the amount CFI should award for each proposal

Stage 3: Special Multidisciplinary Assessment Committee (S-MAC)

- Reviews proposals recommended for funding by the MACs
- Ensures consistency among MAC assessments

CFI 2023 IF ASSESSMENT CRITERIA AND COMMON PITFALLS

ASSESSMENT CRITERIA 1: RESEARCH OR TECHNOLOGY DEVELOPMENT

Research or technology development

Criterion standard: The research or technology development program(s) are innovative, feasible and internationally competitive.

Proposal instructions:

- Describe the proposed research or technology development program(s) that will be enabled by the requested infrastructure.
- Explain the methodologies to be employed and discuss feasibility by identifying key challenges and how the team will overcome them.
- Describe the innovative aspects of the program(s) by positioning it within the current state of knowledge in the field, both in Canada and internationally (include references).

ASSESSMENT CRITERIA 1: RESEARCH OR TECHNOLOGY DEVELOPMENT COMMON PITFALLS

- Unclear vision
- Unrelated or disconnected objectives or topics within the research program
- Proposal overly ambitious (insufficiently demonstrated feasibility)
- Proposed infrastructure insufficiently tied to research program / projects
- Lack of specificity and detail on proposed studies
- Insufficient technical expertise
- Inadequately addressed potential challenges (scientific / technical / clinical)

ASSESSMENT CRITERIA 2: TEAM EXPERTISE

Team expertise

Criterion standard: The team comprises the breadth of experience and expertise needed to conduct the proposed research program(s).

Proposal instructions:

- Describe the expertise required to conduct the proposed research program(s).
- Highlight the team members' experience and expertise through traditional and/or non-traditional research outputs.

ASSESSMENT CRITERIA 2: TEAM EXPERTISE COMMON PITFALLS

- Insufficient ***complementary*** expertise to realize project goals (including translational aims)
- Lack of expertise or experience (scientific and / or technical) with proposed infrastructure
- Unclear role(s) for team member(s)
- No evidence of prior collaboration amongst team members
- Unclear governance or leadership (multi-institutional projects)
- Excellent individuals ≠ highly synergistic team
- Scientific and technical contributions of the team disjointed
- Team members not clearly linked to proposed research projects

ASSESSMENT CRITERIA 3: TEAM COMPOSITION

Team composition

Criterion standard: Principles of equity and diversity were considered in the team composition including in its leadership. There is a commitment to create an inclusive environment where all team members are fully integrated and supported in the research team.

Proposal instructions:

- Describe the specific challenges or systemic barriers that exist in the context of your research program(s) that could prevent individuals from underrepresented groups from participating equitably within the team.
- Describe at least one concrete practice that you put in place to overcome the challenges or systemic barriers you have described and which demonstrates that equity and diversity were intentionally considered in the team composition.
- Describe at least one concrete practice that you will adopt to facilitate the ongoing inclusion of underrepresented groups in the research team, and how you will implement that best practice given the challenges or systemic barriers you have described.

ASSESSMENT CRITERIA 3: TEAM COMPOSITION - EDI

EDI defined at CFI as:

Equity: We aim to ensure all CFI-eligible institutions have opportunity to access and benefit from our programs and CFI-funded infrastructure through our well established, fair and impartial practices.

Diversity: We value attributes that allow institutions and their researchers — from any background and from anywhere — to succeed. This includes individual attributes such as gender, language, culture and career stage; institutional attributes such as size, type and location; and attributes that encompass the full spectrum of research, from basic to applied and across all disciplines.

Inclusion: Our culture encourages collaboration, partnership, contributions and engagement among diverse groups of people, institutions and areas of research to maximize the potential of Canada's research ecosystem.

ASSESSMENT CRITERIA 3: TEAM COMPOSITION - EDI

Resources:

- Government of Canada's Best Practices in Equity, Diversity and Inclusion in Research
- UBC Inclusion Action Plan
- CRC Equity, Diversity, and Inclusion: Best Practices for Recruitment, Hiring and Retention

How an individual self-identifies in terms of belonging to one or more underrepresented groups is considered personal information. Do not in any way provide the personal information of team members (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 persons with disabilities; etc.).

How are systemic barriers defined?

Systemic barriers are defined as policies or practices that result in some individuals from underrepresented groups receiving unequal access to or being excluded from participation in employment, services or programs. Underrepresented groups can include, but are not limited to, women, Indigenous Peoples, persons with disabilities, members of visible minorities/racialized groups, members of LGBTQ2+ communities and early-career researchers.

ASSESSMENT CRITERIA 3: TEAM COMPOSITION COMMON PITFALLS

Tips:

- Avoid “tokenistic inclusion” by carefully examining how EDI is incorporated into your proposal
- Think about gender, career stage, culture in team composition
- Think about access to leadership opportunities & resources
- Set targets for HQP / trainees

ASSESSMENT CRITERIA 4: INFRASTRUCTURE

Infrastructure

Criterion standard: The requested infrastructure is necessary and appropriate to conduct the proposed research program(s) and optimally enhances existing capacity.

Proposal instructions:

- Describe each requested item, including cutting-edge or workhorse equipment as well as upgrades to existing equipment, and justify why it is needed (including if it would replace existing capacity). If possible, refer to specific methodologies highlighted in the "Research or technology development" section.
- Explain how the requested infrastructure enhances and integrates with the existing infrastructure capacity at your institution and at your partners' institution(s).

Consider providing a matrix matching the requested infrastructure with the proposed research activities.

ASSESSMENT CRITERIA 4: INFRASTRUCTURE COMMON PITFALLS

- Duplicate equipment requested
- Scope of proposed activities incongruent with requested equipment
- Insufficient description of infrastructure (including design / technical specifications)
- Insufficient rationale for infrastructure specifications (custom and off the shelf)
- Infrastructure requested does not advance proposed research projects
- Research project(s) and infrastructure appear as two separate entities
- Infrastructure does not provide team with new capabilities

ASSESSMENT CRITERIA 5: SUSTAINABILITY

Sustainability

Criterion standard: The infrastructure will be optimally used and maintained over its useful life through tangible commitments.

Proposal instructions:

- Present a management plan which:
  - Describes how the infrastructure will be optimally used (e.g., user access and level of use)
  - Describes how the infrastructure will be operated and maintained over its useful life
  - Outlines the operating and maintenance costs and revenue sources over the useful life of the infrastructure. Refer to the "Financial resources for operation and maintenance" tables in the project module.
- For larger and more complex projects, describe the proposed governance of the requested infrastructure, including the composition of its decision-making bodies.

If the infrastructure will generate a significant amount of data, include a description of how this data will be managed.

ASSESSMENT CRITERIA 5: SUSTAINABILITY COMMON PITFALLS

- Unclear or insufficiently detailed management and staffing plan (scientific and technical)
- Lack of articulating sources beyond IOF
  - Mention other grant funding, contributions from commercial partners, user fees, institutional contribution(s)
- Overstating impact of user fees on overall sustainability
- Management plan incommensurate to scale of facility
- Overall governance not clearly outlined (in particular for multi-institutional projects)
- Insufficient demonstration of track record managing facilities and / or equipment
- Unaddressed critical dependencies for support and / or maintenance (in particular for highly customized infrastructure)
- Insufficiently detailed roles and skill sets of technical personnel

ASSESSMENT CRITERIA 6: BENEFITS

Benefits

Criterion standard: The team and its partners have a well-defined plan to transfer the results of the research or technology development program(s). The results are likely to lead to social, economic, health or environmental benefits for Canadians.

Proposal instructions:

- Describe the team's plans to transfer the results of the research or technology development program(s).
- Describe the team's experience in knowledge mobilization and/or technology transfer.
- Describe the potential benefits to Canadians, including the skills highly qualified personnel will develop through using the requested infrastructure.

In addition to more common benefits, some other examples include: increased participation of underrepresented groups (including those who may face systemic barriers, increased scientific literacy among the public, public engagement, partnerships outside of academia, published datasets.

ASSESSMENT CRITERIA 6: BENEFITS – ECONOMIC & SOCIAL BENEFITS

The WHAT of benefits to Canada:

- Affect the economy and/or society
- Generate decision systems & evidence-based policy recommendations
- Catalyze technology breakthroughs
- Create new jobs or training opportunities (HQP)
- Create Canadian start-up and spin-off companies
- Generate new IP / licensing agreements
- Build new partnerships & collaborations (in Canada & internationally)
- Improve BC and Canada's profile in a specific area
- Improve Canadians' quality of life

ASSESSMENT CRITERIA 6: BENEFITS – ECONOMIC & SOCIAL BENEFITS

In the context of job creation:

- **Where** will jobs be created?
  - Rural communities?
  - Cities?
  - Can you specify where exactly?
- **What** kind of jobs will be created?
  - Highly skilled jobs? Career pathway(s) for HQP?
  - Natural resource-focused jobs?
  - “Knowledge economy” jobs?

ASSESSMENT CRITERIA 6: BENEFITS TO CANADA – OTHER INDICATORS

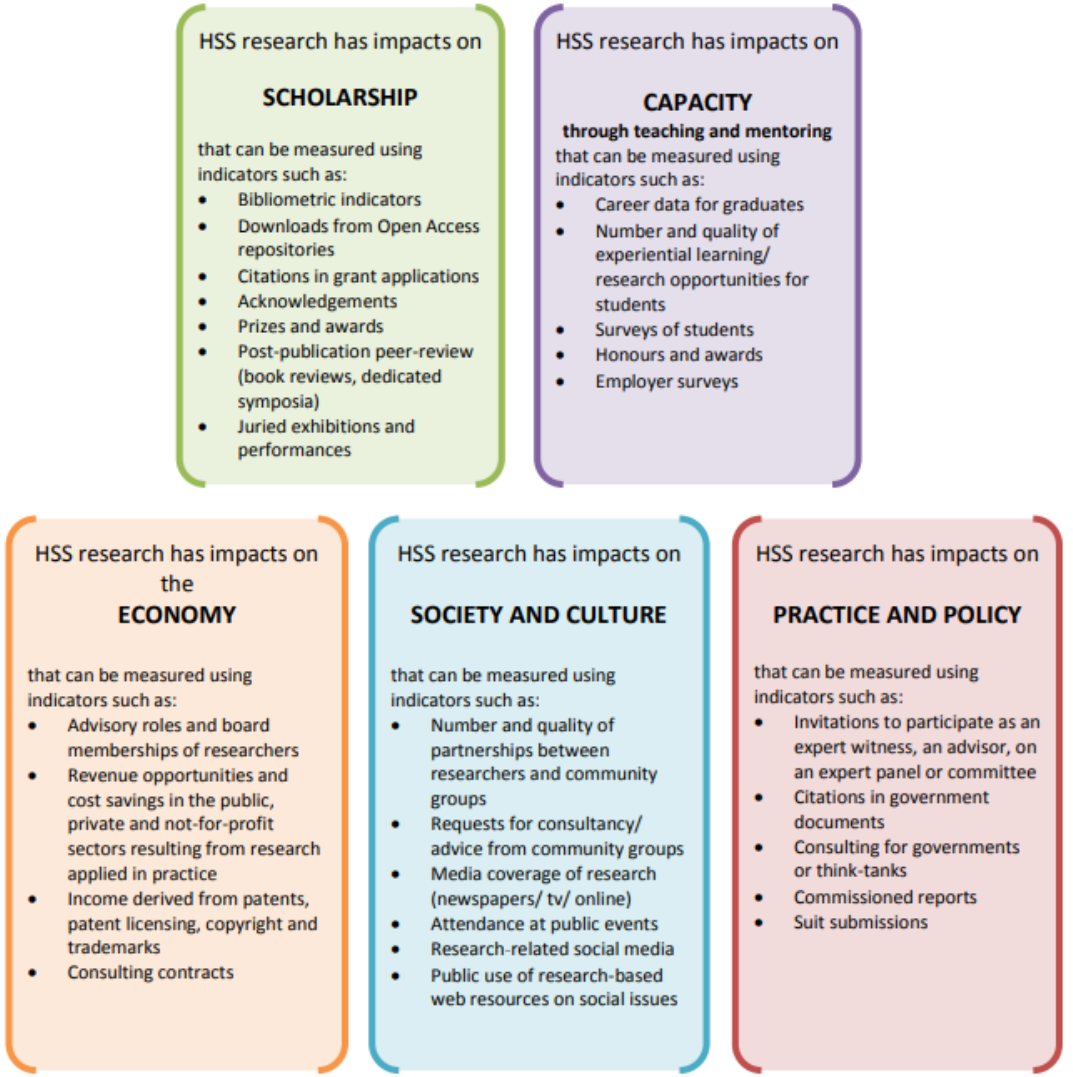
Health:

- Reduced mortality or morbidity
- Better outcomes or improved quality of life
- Improved public health
  - assessment, policy development, assurance, accessibility, risk management
- Infection prevention or control
  - For whom? Elderly? Children?
  - Those with chronic disease?
  - Across life spectrum?
  - Certain geographies?

- **Environmental:**
- Decreased pollution or deforestation etc
- Green infrastructure & new clean technologies
- More livable communities
- New transportation models
- Species conservation / protection of biodiversity

ASSESSMENT CRITERIA 6: BENEFITS TO CANADA – OTHER INDICATORS

Developed for SSH research but can be useful for many research areas given the 'impacts' section refers to societal benefits (training, economy, society and culture, practice and policy)



Source: Federation for the Humanities and Social Sciences, 2014. A Framework for Identifying Impact and Indicators

ASSESSMENT CRITERIA 6: BENEFITS TO CANADA – COMMON PITFALLS

- Statements are too vague or generic. Sample statements from a previously successful proposals:
  - Globally, pollutants from road vehicles kill 200,000 people per year
  - In Canada, road vehicles accounts for approximately 25% of GHG emissions
  - In Canada, it is estimated that road traffic accidents cost the economy $25B per year
  - For the first time, cities are beginning to set “Vision Zero” targets to eradicate road fatalities
  - Worldwide, infectious diseases are the leading cause of premature mortality; in Canada infections are the fifth leading cause of premature loss of life
  - In 2014, the World Bank listed road transportation as No. 6 in the global burden of disease rankings
  - Preterm birth (defined as <37 weeks gestation) is the leading cause (27%) of neonatal mortality in Canada

- Position the research and its aims in Canadian and international context(s)
- Be tangible, concrete & quantitative about the context of your research

ASSESSMENT CRITERIA 6: BENEFITS TO CANADA – HQP

- Highlight the potential for training of highly qualified personnel and the need for, and potential impact of, those HQP and describe how access to the new infrastructure will improve the quality and quantity of HQP
- Describe limitations of the past training model and why the new training model represents a significant improvement. Include the role of the infrastructure in facilitating this
- Describe how the project would help attract and retain the best researchers, and create a stimulating, enriched and innovative training environment that will prepare Canadians for careers in research and other areas that will benefit Canada
- Describe the track record of the team in training HQP. Provide statistics and show where in industry and the public sector these HQP are now working. Estimate the number and level of HQP (undergraduate and graduate students, post-doctoral fellows, technicians, technologists, other trainees/students) to be trained and over what time frame
- Describe why the HQP are critical to the transfer of knowledge from the academic to the private and public sectors

ASSESSMENT CRITERIA 6: BENEFITS TO CANADA – COMMON PITFALLS

Show *how* the research / technology development program will bring about the stated benefits

- "Appropriate pathways" must be clearly articulated & described
- Design a well-defined knowledge translation (KT) plan
  - Goal: the change you are hoping to see happening based on your research & KT plan
  - Stakeholders, degrees of engagement and roles (partners, end users, audience)
  - Activities are well described and are planned along the impact pathway
  - Impact indicators
  - Budget/resources specific to KT/timeline

ASSESSMENT CRITERIA 6: BENEFITS TO CANADA – COMMON PITFALLS

Confuses research and impact goals

e.g. Tackle new frontiers in the study of X and stay at the forefront of field X

Instead: Raise awareness of the potential of X developments for X practices

Defines partners broadly and with no specific roles

e.g. The genomic data for the pathogens will inform the development of treatment methods for the benefit of salmon farmers

Instead: BC Salmon Farmers Association will help define mitigation strategies and standards based on pathogens detection on farm raised salmon

Engages with usual partners instead of potential end users

e.g. Partner X has maintained a long-standing partnership with X member of the research team in various areas

Instead: Partner X has a well-established network in area X and can help share research findings with and mobilize end users on issue X

ASSESSMENT CRITERIA – DO NOT ASSUME…

- ...that all reviewers will give your proposal an in-depth review
- …that all reviewers are specialists or experts in your research area(s)
- …that reviewers will quickly or easily understand why your work is innovative / groundbreaking
- …that reviewers will be Canadian, or familiar with the Canadian “innovation ecosystem”
- ….that your grant writer will have in-depth knowledge to articulate the science and research activities

CFI 2023 IF – BUDGET DEVELOPMENT BEST PRACTICES

CFI ELIGIBLE INFRASTRUCTURE

CFI programs fund equipment, construction/renovations for space to house CFI-funded equipment, and personnel for the acquisition and development of CFI-funded equipment.

CFI ELIGIBLE	NOT CFI ELIGIBLE
Research equipment, software, personnel, databases, travel & initial training, construction/renovations, warranties, service contracts, lab furniture	Leased property, operating costs, office furniture, supplies and consumables, trainee stipends, KM and conference costs, and anything for clinical, teaching, office or admin use

CFI IF 2023 BUDGET DEVELOPMENT – BEST PRACTICES

Equipment

- CFI recommends bundling items into functional groupings to keep your list of items manageable, to reduce the administrative burden when implementing the project. However, details and justification for each item within a group should be provided when addressing the infrastructure criterion.
- You want to avoid a laundry list of infrastructure requests.
- Include the shipping cost and taxes in the cash cost of equipment. However, taxes must not be calculated on the in-kind portion.
    - For foreign purchases, ensure the exchange rate used is reasonable. For all currencies, please use the buying rate on the Bank of Canada website (https://www.bankofcanada.ca/). Please add a couple of basis points as the buying rate is normally reserved for large financial institutions.

Sales Tax Rates

- Tax rate used should be 8.65% for equipment, and 1.65% (GST only) for construction for invoices. (Typically, taxes are already included in the cost estimate you receive from UBC Facilities Planning).

CFI IF 2023 BUDGET DEVELOPMENT – BEST PRACTICES

Contributions From Eligible Partners

- Eligible partner contributions (cash) & in-kind contributions: minimum 20% of the total project cost.
- Eligible in-kind contributions are defined as non-monetary resources that external partners offer as a contribution toward a CFI-funded project.
- Keep in mind that the In Kind amounts should only include CFI Special Discounts. Educational discounts should not be included here.
- There is no real advantage to claiming more discounts.
- Contributions from UBC cannot be considered as in-kinds. They should be treated as cash contributions.

CFI IF 2023 BUDGET DEVELOPMENT – COMMON PITFALLS

- Unreasonable equipment costs e.g requesting top of the line features when there are cheaper alternatives available – ask is this the best use of tax payers dollars?
- Not including tax and shipping to the cash cost of the equipment
- Not separating cash cost (after tax, shipping and discounts) and CFI in-kinds (pre-tax, only CFI eligible discounts and not other discounts like Educational) in their respective budget categories
- Asking for more than 20% in-kind contributions – there is no real advantage to claiming more discount
    - The BCKDF % is locked in at the application stage
- Making assumptions that cash contributions from other sources is available, this should be committed at the application stage and not after
- The item # and name in the cost of individual item section of CAMS does not align/match with the assessment criteria

B.C. KNOWLEDGE DEVELOPMENT FUND (BCKDF)

INVESTING IN B.C.'S RESEARCH INFRASTRUCTURE

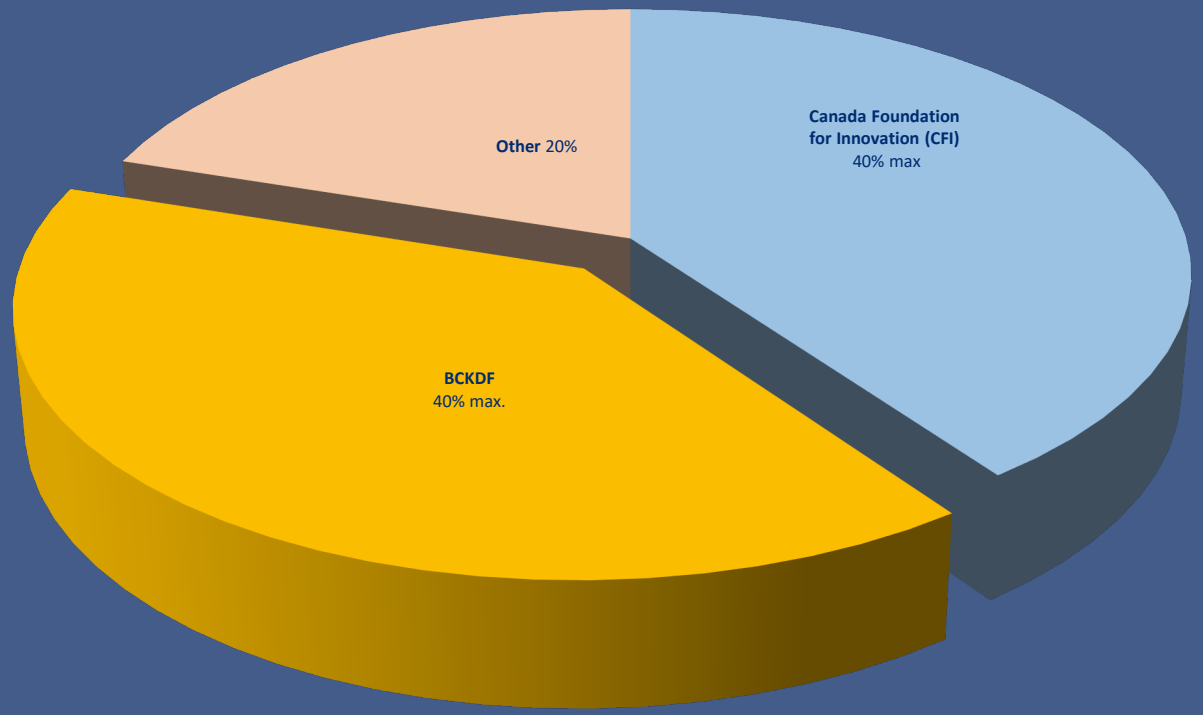
INVESTING IN B.C.'S FUTURE

BCKDF: Background

- Created in 1998: 21 year old
- B.C.’s primary capital investment in research infrastructure
- Enables B.C.’s institutions to compete successfully for funding
- Builds capacity for research, innovation & tech development
- Over $780M awarded since 1998

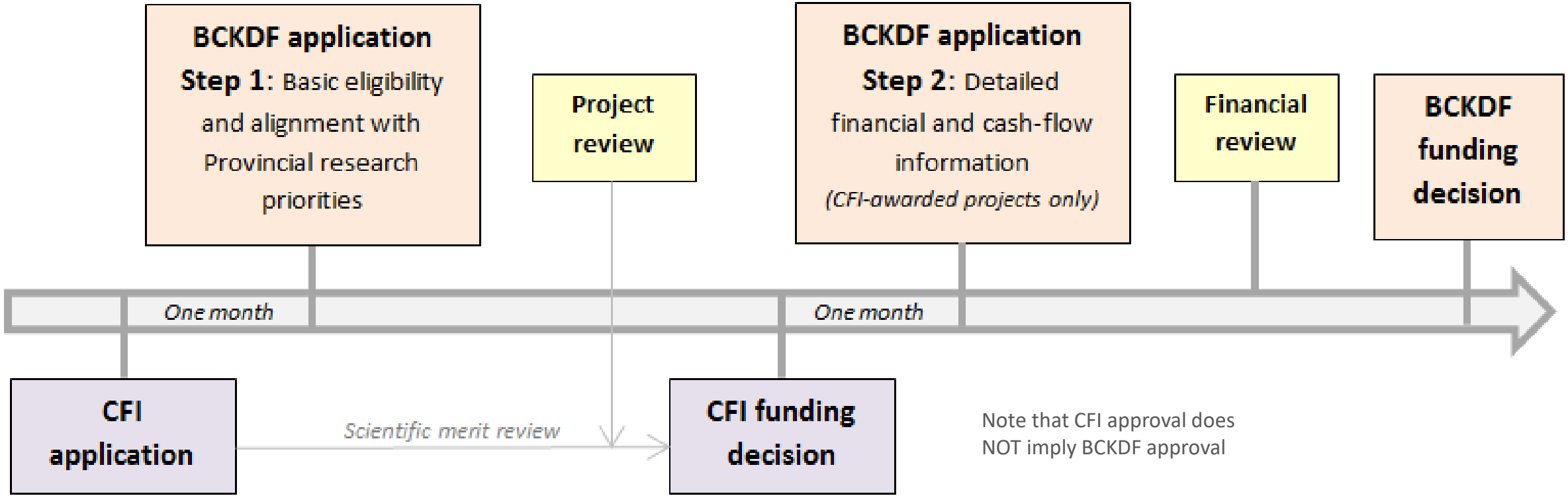
BCKDF: Funding principles

- Capital investment in BC research infrastructure
- Every BCKDF dollar leverages 2.5 x investment in B.C.



BCKDF application process

https://www2.gov.bc.ca/gov/content/governments/about-the-bc-government/technology-innovation/bckdf



BCKDF: Research priorities

- ***Societal, environmental, and economic*** *benefits to B.C.*
- ***Research translation*** *(plans to achieve expected benefits of research)*

BCKDF: Societal benefits for B.C.

Examples:

- Improvements to health and well-being of British Columbians
- Benefits for equity-seeking groups or Indigenous peoples
- Profound shift in the understanding of a given discipline
- Improvement of services for British Columbians
- Making B.C. more affordable
- Reducing poverty in B.C.

BCKDF: Environmental benefits for B.C.

Examples:

- Preservation of B.C.’s natural environment and wildlife
- Enhancement of B.C.’s natural environment and wildlife
- Reduction of greenhouse gas emissions in B.C.
- Development of sustainable urban environments

BCKDF: Economic benefits for B.C.

Talent:

- Expected number of students trained on infrastructure
- Type of skills gained; demand for skills
- Contribution of infrastructure to recruitment of researchers

Jobs:

- Expected creation of direct and short-term jobs
- Expected number of student jobs, indirect and long-term jobs

BCKDF: Economic benefits for B.C.

Examples:

- Improvement to B.C.'s productivity or competitiveness
- Development of specific economic sectors
- Regional economic development
- Promotion of trade
- Potential for commercialization, spin-offs, patents, etc.

BCKDF: Research translation

*(Plans to achieve expected benefits of research **for B.C.**)*

Examples:

- Timelines
- Collaborations to engage with users (e.g. industry, non-profit, government)
- Partnerships to share infrastructure, license technologies, create start-ups, etc.
- Roles of research team in realizing research impacts
- Previous knowledge transfer experience of research team
- Collaborations with expert organizations (accelerators, liaison offices, non-profits)

INTERNAL UBC TIMELINE

INTERNAL UBC DEADLINES

	DATES
UBC Internal deadline for formative review (optional) Peer review process – 2 weeks	March 14th 2022
UBC Internal deadline for formative review (mandatory for all UBC-led proposals) Peer review process – 2 weeks	April 19th 2022
Draft revised BCKDF step 1 application due	April 19th 2022
UBC Internal deadline for final IF application for IPO review	May 24th 2022
Submission to the CFI	June 15th 2022
UBC Internal deadline for final BCKDF Step 1	July 11th 2022
Submission to the Province - BCKDF Step 1 application	July 14th 2022
CFI funding decision	March 2023
BCKDF Step 1 application deadline	April 2023
BCKDF funding decision	October 2023

For more details visit us at: https://ipo.ubc.ca/

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