

Appendix 1 - Evaluation Matrix

The following table provides the list of evaluation questions and their alignment with the indicators, as well as the data sources that are expected to contribute evidence for each indicator.

Figure 1: Evaluation Matrix for the CERC and C150 Chairs programs

Evaluation Question	Purpose of the Evaluation Question	Indicators	Data Sources
Relevance			
1. To what extent do the CERC and C150 programs continue to address a unique need?	<p>Building on the findings from the last evaluation of the CERC program, the evaluation will include a very brief assessment of the continued need for the programs within the suite of federal programs aimed at building research capacity by attracting or supporting the attraction of world-class researchers. This will involve examining key program features and stakeholder perceptions. The analysis will also identify key changes to the national and international context that have impacted the relevance of programs occupying this niche.</p> <p>The evaluation will not be updating the international comparison study of other international programs that was done as part of the last evaluation. This means that there will be no new findings related to how competitive the two programs are on a global scale based on their value and duration.</p>	a. Brief description of the niche of CERC and C150 in relation to other federal programs aimed at attracting or supporting the attraction of world-class researchers (i.e., CRCs, CFREF, CFI, Vanier) with reference to key program features such as the programs' detailed objectives, funding amounts, and targeted/non-targeted funding	Document and literature review
		b. Perceptions of the niche of the CERC and C150 in relation to other federal programs aimed at building research capacity	Interviews (VPs of research, active CERC chairholders from the second competition, C150 chairholders, CERC and C150 management and staff, selection committee and review panel members)
		c. The extent to which recent changes have occurred in the national and international context that have impacted the relevance of programs occupying the identified niche (since 2013-14)	<p>Document and literature review</p> <p>Interviews (VPs of research, active CERC chairholders from the second competition, C150 chairholders, CERC and C150 management and staff, selection committee and review panel members, representatives from non-Canadian organizations funding research excellence or subject matter experts)</p> <p>Case studies of CERCs (Chairholders, representatives from the university's research office and/or the Dean of the faculty in which the CERC is housed)</p>

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Performance			
<p>2. To what extent have the CERC and C150 programs attracted world-class researchers to Canada?</p>	<p>The evaluation question will focus on the productivity and scientific impact of the CERC and C150 chairholders prior to nomination to assess if world-class researchers were attracted. The diversity of chairholders from both programs will also be looked at.</p> <p>Finally, C150 chairholders will be interviewed to gain an increased understanding as to what extent the C150 has made a difference in attracting world-class researchers that would otherwise not have come to Canada. Similar information for CERC chairholders was collected as part of the previous evaluation.</p>	<p>a. Scientific production, Median ARIF (average relative impact factor), Median ARC (average relative citation) of CERC and C150 chairholders ten years prior to nomination</p> <p>b. <i>If feasible</i>: Number and percentage of CERCs who have papers published in top-cited publications compared to C150 chairholders and Tier 1 CRCs ten years prior to award</p> <p>c. Extent of diversity of CERC and Canada 150 chairholders</p> <p>d. Perception of the extent to which the CERC and Canada 150 programs have attracted world-class researchers that would otherwise not have come to Canada</p> <p>e. The extent to which recent changes have occurred in the international context that could have had an impact on the programs' ability to attract world-class researchers (since 2013-14)</p>	<p>Bibliometric study</p> <p>Bibliometric study</p> <p>CERC and C150 administrative data review (exact source to be identified)</p> <p>Interviews (C150 chairholders, VPs of research, CERC and C150 management and staff, selection committee and review panel members, representatives from non-Canadian organizations funding research excellence or subject matter experts)</p> <p>Document and literature review (previous evaluation of CERC)</p> <p>Interviews (VPs of research, active CERC chairholders from the second competition, C150 chairholders, CERC and C150 management and staff, selection committee and review panel members, representatives from non-Canadian organizations funding research excellence or subject matter experts)</p>

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<p>3. To what extent have the CERCs contributed to enhanced and sustainable research capacity at Canadian universities in areas of strategic importance identified by the federal government?</p>	<p>The assessment of CERC will focus on its contribution to enhanced and sustainable research capacity in strategic research areas identified by the federal government. The term "research capacity" can have a broad scope; therefore, the four sub-sections and related indicators attempt to only capture the key aspects of research capacity of interest to stakeholders consulted during the planning-phase of the evaluation.</p> <p>The subsection will look at the composition of CERC core teams and assess the chairholders impact on the team. A bibliometric study of core team members could also provide evidence to this subsection if deemed practically and financially possible. Training and experience received by HQP will also be reviewed and will mainly be analysed through case studies. Finally, the adequacy of measures put in place to address systemic barriers related to recruitment and nomination will be assessed through existing performance data, interviews, case studies, and a survey of HQP (if feasible).</p>	<p>High-calibre and diverse core teams</p>	
		<p>a. Number of CRC holders who are members of CERC core teams</p>	<p>Document and literature review</p>
		<p>b. Number, type, and role of CERC core team members (e.g., year-to-year, by nationality, early career researchers)</p> <p>If a survey of CERC core team members is undertaken, also look at by previous institution and area of study</p>	<p>CERC administrative data and file review (annual institution and chairholder reports, mid-term review)</p> <p>Interviews (Active CERC chairholders from the second competition)</p> <p><i>If feasible:</i> Survey of CERC core team members</p>
		<p>c. Scientific production, Median ARIF (average relative impact factor) and Median ARC (average relative citation) of CERC post-award (exact year to be determined)</p>	<p>Bibliometric study</p>
		<p>d. <i>If feasible:</i> Number and percentage of CERCs who have papers published in top-cited publications compared to Tier 1 CRCs post-award (exact year to be determined)</p>	<p>Bibliometric study of CRCs</p>
		<p>e. <i>If feasible:</i> Scientific production, Median ARIF (average relative impact factor) and Median ARC (average relative citation) of faculty part of the CERC core teams (exact years to be determined) as well as number and percentage of faculty who have papers published in top-cited publications</p>	<p>Bibliometric study of core team faculty</p>
		<p>f. Number and type of research outputs of CERC core teams (e.g., publications, patents, awards, invited engagements)</p>	<p>CERC administrative data and file review (annual chairholder reports, mid-term review)</p>
		<p>g. Extent of other funding obtained from other sources by core team members</p>	<p>CERC administrative data and file review (annual institution and chairholder reports, mid-term review)</p>
		<p>h. The extent to which host institutions, chairholders, and CERC core teams have implemented adequate measures to mitigate systemic barriers in their recruitment and nomination processes (i.e., they have identified key systematic barriers and have EDI plans in place)</p>	<p>Document and literature review</p> <p>Interviews (VPs of research, active CERC chairholders from the second competition, CERC and C150 management and staff)</p> <p>Case studies of CERCs (Chairholders, core team members [faculty, HQP], representatives from the university's research office and/or the Dean of the faculty in which the CERC is housed)</p>

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Evaluation Question	Purpose of the Evaluation Question	Indicators	Data Sources
		i. Proportion of current chairholders and CERC core team members self-identifying in the four designated groups	CERC administrative data and file review (self-identification forms) Survey of CERC core team HQP Interviews (VPs of research, active CERC chairholders from the second competition, CERC and C150 management and staff) Case studies of CERCs (Chairholders, core team members [faculty, HQP])
		j. Extent and nature of HQP core team training experiences (e.g., type of involvement and training, opportunities to develop new expertise and enhance existing skillsets)	Interviews (Active CERC chairholders from the second competition) Case studies of CERCs (Chairholders, core team members [faculty, HQP]) Survey of CERC core team HQP
		k. <i>If feasible:</i> Number and proportion of HQP employed in an area related to the CERC following their involvement with a CERC core team, in Canada or abroad	Survey of CERC core team HQP
		l. Perception of the extent of HQP employed in an area related to the CERC following their involvement with a CERC core team, in Canada or abroad	Case studies of CERCs (HQP)
		m. <i>If feasible:</i> Percentage of HQP who are in Canada and intend to remain, or intend to return	Survey of CERC core team HQP

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	<p>This subsection will focus on the number and nature of new and existing collaborations with academics and other sectors. This information will be derived from existing performance data and supplemented by case studies or interviews with chairholders.</p>	Collaborations and partnerships	
		<p>n. Number of new and existing collaborations and partnerships initiated during the grant term (by institution, national/international, discipline, and sector)</p>	<p>CERC administrative data and file review (annual chairholder reports, mid-term review)</p>
		<p>o. Descriptions of the nature of new and existing collaborations and partnerships (e.g., cash/in-kind contributions, type and level of involvement)</p>	<p>CERC administrative data and file review (annual chairholder reports, mid-term review) Interviews (Active chairholders from the second competition) Case studies of CERCs (Chairholders, collaborators, partners)</p>
		<p>p. Amount of cash and in-kind investment from partners</p>	<p>CERC administrative data and file review (annual report for chairholders, mid-term review) Case studies of CERCs (collected from institutions through documentation)</p>
	<p>This subsection will feature examples of the scientific impact of discoveries and insights from the CERC core teams and the provision of expert advice by chairholders. Program-collected performance data, key informant interviews, and case studies will address the indicators in this subsection.</p>	Knowledge mobilization	
		<p>q. Examples of discoveries and insights that have had a wide scientific impact</p>	<p>Interviews (VPs of research, active CERC chairholders from the second competition, CERC and C150 management and staff) Case studies of CERCs (Chairholders, core team members [faculty, HQP], representatives from the university's research office and/or the Dean of the faculty in which the CERC is housed) Document and literature review (media coverage)</p>
		<p>r. Examples of chairholders that have provided expert advice to potential knowledge users</p>	<p>Interviews (Active chairholders from the second competition) Case studies of CERCs (Chairholders, core team members [faculty, HQP]) CERC administrative data and file review (annual institution and chairholder reports)</p>

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	<p>This subsection will analyse the growth of the CERCs and their sustainability. Program-collected performance data, key informant interviews, and case studies will provide key evidence.</p>	<p><i>Investment and growth in research areas identified by the federal government</i></p> <p>s. Number of chairholders who are also involved in one or more CFREFs and/or are a recipient of other federal funding (e.g., CFI or Genome Canada) or other non-federal funding</p> <p>t. Number and proportion of institutions with a CERC who also have a CFREF in the same area of research</p> <p>u. Proportion of CERC chairholders who maintain a position with a foreign institution during their term, and related impacts (e.g., on the number of international collaborations, sustainability of Chair)</p> <p>v. Examples of institutional growth in the strategic research areas identified by the federal government (e.g. number of new faculty positions; number of new programs in areas related to the research of the chairholder; number of improved programs and course and the nature of those improvements; new buildings, new equipment, etc.)</p> <p>w. The extent to which institutions can be anticipated to retain a critical mass of outstanding tenured and non-tenured key researchers, and HQP, in the same research area</p>	<p>Document and literature review</p> <p>Document and literature review</p> <p>CERC administrative data and file review (annual chairholder reports)</p> <p>Interviews (Active chairholders from the second competition)</p> <p>Case studies of CERCs (Chairholders)</p> <p>Bibliometric analysis</p> <p>Interviews (VPs of research, CERC and C150 management and staff, selection committee and review panel members)</p> <p>Document and literature review</p> <p>CERC administrative data and file review (annual institution and chairholder reports, mid-term review)</p> <p>Interviews (VPs of research, active CERC chairholders from the second competition, CERC and C150 management and staff)</p> <p>Case studies of CERCs (Chairholders, core team members [faculty, HQP], representatives from the university's research office and/or the Dean of the faculty in which the CERC is housed)</p> <p>CERC administrative data and file review (sustainability plans, mid-term review)</p>

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Design, Delivery, and Efficiency			
<p>4. To what extent are the design and delivery of the CERC and C150 programs effective and cost-efficient?</p>	<p>Certain aspects of the programs' design and delivery will be examined as part of the evaluation to highlight areas that work well and areas that can be improved. This will include comparing the design of the competition cycle for the two programs. The evaluation will also look at the way in which the programs support EDI.</p> <p>The analysis of cost-efficiency will look at the ratio of administrative expenditures in relation to the total amount of grant expenditures in comparison to other programs administered by TIPS. The ratio for the TIPS Secretariat will also be compared to that of the Vanier, Banting, and Networks of Centres of Excellence (NCE) Secretariats.</p>	<p>a. Perceptions regarding the extent to which the programs are designed and delivered in an efficient and effective manner (includes looking at suggestions for improvements)</p>	<p>Interviews (VPs of research, active CERC chairholders from the second competition, CERC chairholders who left before the end of the term, C150 chairholders, C150 chairholders that declined the grant, CERC and C150 management and staff, selection committee and review panel members)</p> <p>Case studies of CERCs (Chairholders, representatives from the university's research office and/or the Dean of the faculty in which the CERC is housed)</p>
		<p>b. Perceptions of the relative effectiveness of the competition cycles for CERC vs C150</p>	<p>Interviews (VPs of research, active CERC chairholders from the second competition, CERC chairholders who left before the end of the term, C150 chairholders, C150 chairholders that declined the grant, CERC and C150 management and staff, selection committee and review panel members)</p>
		<p>c. The extent to which the CERC and the Canada 150 programs' design and delivery support EDI (including a description of the recent modifications to the CERC program)</p>	<p>Interviews (VPs of research, active CERC chairholders from the second competition, CERC chairholders who left before the end of the term, C150 chairholders, C150 chairholders that declined the grant, CERC and C150 management and staff, selection committee and review panel members)</p> <p>Document and literature review</p>
		<p>d. The ratio of administrative costs to grant funding for the CERC program (operating ratio)</p>	<p>CERC administrative data and file review (program and secretariat financial data)</p>