

# **Major Science Initiatives 2014 special competition**

Guidelines for multidisciplinary  
assessment committee members

July 2014

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## MANDATE OF THE CANADA FOUNDATION FOR INNOVATION

Created by the Government of Canada in 1997, the Canada Foundation for Innovation (CFI) strives to build our nation's capacity to undertake world-class research and technology development that benefits Canadians. Thanks to CFI investments in state-of-the-art facilities and equipment, Canadian universities, colleges, research hospitals and non-profit research institutions are attracting and retaining the world's top research talent, training the next generation of researchers, supporting private-sector innovation and creating high-quality jobs that strengthen Canada's position in today's global knowledge-based economy.

Additional information on the CFI is available on our website at [Innovation.ca](http://Innovation.ca).

## MAJOR SCIENCE INITIATIVES (MSI) 2014 SPECIAL COMPETITION

### Context

In the fall of 2013, the CFI published a [Call for proposals](#) for a special competition of its Major Science Initiatives Fund. Funding awarded under this MSI special competition is intended to **secure and strengthen unique, national research facilities that support world-class research — the loss of which would represent a serious setback for Canada**. These facilities represent collective resources for the Canadian research enterprise, are currently fully operational, and are being used and accessed by a broad range of researchers from across the country and, where appropriate, internationally.

This funding will complement existing operations and maintenance (O&M) resources. It is expected that current O&M funders will continue their support.

### Objectives

The MSI 2014 special competition will provide multi-year support toward the O&M needs of unique national research facilities, enabling researchers to undertake world-class research and technology development that will lead to social, health, economic or environmental benefits for Canada. CFI support through this competition is intended to secure and strengthen unique national research facilities in order to:

- enable funded facilities to operate at an optimal level and to fully exploit their scientific capabilities; and
- promote the adoption of best practices in governance and management, including long-term strategic and operational planning in keeping with the scale and complexity of the facility.

### Definitions

#### Unique national research facility

An MSI addresses a set of scientific problems or questions of such significance, scope and complexity that it requires unique facilities and equipment, substantial human resources and complex operating and maintenance activities. As such, MSIs are viewed as collective resources that are typically too large to be funded exclusively by any one institution or organization.

An MSI offers specialized capabilities, that are not standard in a discipline or research area, to a broad range of researchers from across Canada and, where appropriate, internationally. The term “unique” in this context applies to the national research facility itself rather than the research enabled by it and signifies that its capabilities are not found elsewhere in the country.

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**Management and governance**

MSIs have an established governance and management structure appropriate to the level of specialization of its equipment, personnel, service delivery model, user base, complexity of its funding profile and the risks associated with operating such a facility. Typically, larger and more complex facilities require a higher level of governance (e.g. Board of Directors independent of research users), while smaller or less complex facilities may be governed by, for example, a Board of Trustees or an oversight committee.

**Funds available**

The CFI will invest up to \$25 million over three years (approximately \$8 million per year from 2014-15 to 2016-17) to cover a portion — not exceeding forty percent — of a facility's total eligible O&M costs.

**Proposals submitted**

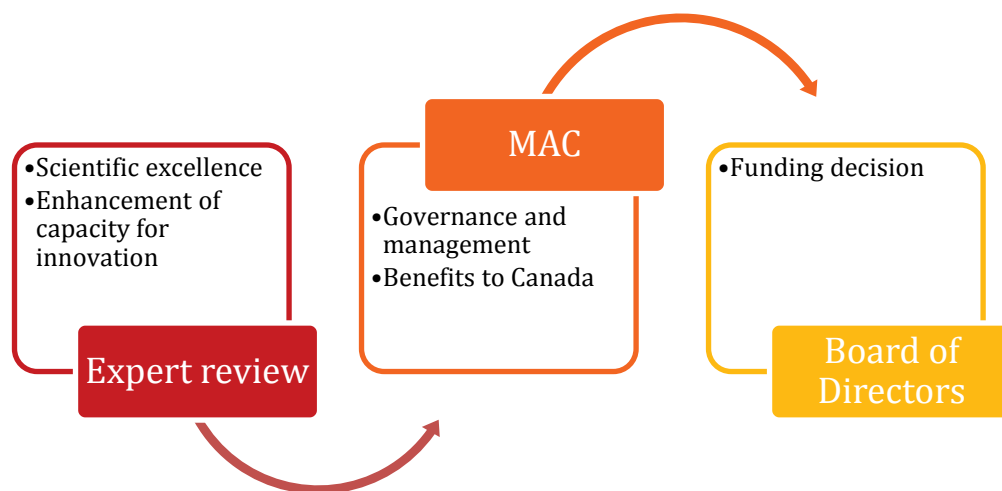
As per the *Call for proposals*, the MSI 2014 special competition required submission of a notice of intent (NOI) in advance of submission of a full proposal. At the February 27, 2014, deadline, the CFI received 59 notices of intent (NOIs) from 29 institutions, requesting nearly \$120 million from the CFI. The CFI assessed the eligibility of the proposed MSI based on the five established eligibility criteria.

A total of 23 facilities were invited to submit proposals by the May 20, 2014, deadline. By this date, the CFI received proposals from each of the 23 invited facilities, requesting a total of \$61.1 million. On average, this represents 27% of the \$223M total operating and maintenance costs of the facilities. The amounts requested per proposal vary from just over \$400K to over \$7.6M.

Given the availability of \$25 million for this competition, the CFI expects a funding rate approaching 41%. The success rate, however, could vary significantly.

**THE CFI STRUCTURED MERIT REVIEW PROCESS**

Through its structured merit review process, the CFI ensures that proposals are reviewed in a fair, competitive, transparent and in-depth manner. The review process for the MSI 2014 special competition is built around four assessment criteria that reflect the competition's objectives and involves two stages of committee review, by expert committees and a multidisciplinary assessment committee (MAC), as illustrated in Figure 1.

**Figure 1 – The MSI 2014 special competition merit review process**

### Assessment criteria

Each proposal submitted to this competition is evaluated on the basis of four assessment criteria:

1. Scientific excellence
2. Enhancement of capacity for innovation
3. Governance and management
4. Benefits to Canada

As outlined in Figure 1, the “scientific excellence” and “enhancement of capacity for innovation criteria” will be assessed by the expert committees and the “governance and management” and “benefits to Canada” criteria will be assessed by the MAC.

Each criterion has two to three statements that define the standards of excellence against which the proposals are compared (Appendix 1 – Assessment criteria). In other words, instead of a global score or rating, proposals are assessed on how well they meet each of these criterion standards. Reviewers will assess the degree to which the proposals meet each standard and will support this assessment by highlighting the strengths and weaknesses of the proposal.

The information provided in the proposals should be the sole information source on which you base your evaluations and comments. It is incumbent upon the applicants to demonstrate in their proposals how their projects satisfy the requirements outlined under each criterion.

To be considered for funding, a proposal must satisfy each of the four criteria.

## Assessment scale

The following assessment scale is used to indicate the degree to which the proposal has met each criterion standard.

<b>EX</b>	Satisfies and significantly exceeds the criterion standard in one or more aspects	<b>SA</b>	Satisfies the criterion standard in all aspects	<b>SW</b>	Satisfies the criterion standard with only a few minor weaknesses	<b>PS</b>	Partially satisfies the criterion standard with some significant weaknesses	<b>NS</b>	Does not satisfy the criterion standard due to major weaknesses
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## Expert committee review

In the first stage of merit review, expert committees convene to assess two of the four criteria, the “scientific excellence” and “enhancement of capacity for innovation” of each facility in relation to the established standards for this competition. The expert committee also evaluates the projects’ O&M budgets.

The CFI convened 13 expert committees to review the proposals submitted to this competition. Each committee is tasked with evaluating from one to four proposals, with approximately half of the committees examining a single proposal. For the larger or more complex proposals (5 out of 23), the committee meeting includes a face to face meeting between the applicants and expert committee.

These committees recommend to the MAC those proposals that meet the standard of scientific excellence for the competition and recommend the amount that should be awarded to each proposal. Proposals not recommended by the expert committees will not be considered by the MAC.

## Multidisciplinary assessment committee

The second stage of review involves assessment by the MAC of the proposals deemed to have met the standard of scientific excellence for the competition by the expert committees.

The MAC’s task is threefold:

1. It will assess the strengths and weaknesses of the “governance and management” and “benefits to Canada” of each proposal in relation to the established criterion standards (Appendix 1 – Assessment criteria).
2. Taking into consideration its own assessment of the proposals along with the review and advice of the expert committees, the MAC will identify proposals that are meritorious of funding (i.e. fundable/do not fund) and what level of funding would be most appropriate.
3. The MAC will recommend to the CFI Board of Directors the subset of meritorious proposals that most effectively support the CFI’s mandate, meet the objectives of the competition and represent the most effective portfolio of investments for Canada.

## Membership and roles

Members of the MAC will be chosen by CFI staff for their capacity to assess proposals based on the assessment criteria and, in particular, on their breadth of expertise in the governance, management and operation of national research facilities. The MAC is comprised of a chair and approximately eight members, depending on the number and breadth of proposals to be

reviewed. The chair will ensure that the MAC functions smoothly, effectively and objectively in accordance with CFI policies.

### Conflict of interest and confidentiality

The CFI expects MAC members to maintain the highest standards of ethics in fulfilling their role. They are appointed as individuals, not as advocates or representatives of their discipline or of any organization. All members and chairs must adhere to the [Conflict of interest and confidentiality agreement](#), as summarized in Appendix 2 – Conflict of interest policy.

### Timeline and key activities

This table summarizes your key activities as a MAC member as well as important dates for the MSI 2014 special competition.

Dates	Activities
July/August 2014	<ul style="list-style-type: none"> <li>Complete and return the <i>Committee member information form</i> by email</li> <li>Read these guidelines for the MSI 2014 special competition</li> </ul>
August/September 2014	<ul style="list-style-type: none"> <li>Activate access to <a href="#">CAMS</a> and review assigned proposals</li> <li>MAC member briefing</li> <li>Read and assess the proposals</li> </ul>
October 14, 2014	<ul style="list-style-type: none"> <li>Submit ratings online</li> </ul>
October 20, 2014 (evening)	<ul style="list-style-type: none"> <li>Welcome and presentation by CFI staff</li> </ul>
October 21-22, 2014	<ul style="list-style-type: none"> <li>MAC meeting</li> </ul>
November 25, 2014	<ul style="list-style-type: none"> <li>Board funding decisions</li> </ul>

### Travel

You must complete the *Committee member information form* containing key information to help us, and our travel agency, Carlson Wagonlit Global Travel Centre, make travel arrangements for the meeting. This form will be sent to you by email shortly after you accept our invitation to serve on the MAC. Please complete the form and return it by email to CFI staff as early as possible before the meeting. You will be contacted shortly thereafter by a representative of Global Travel with a proposed flight itinerary. The CFI will pre-pay all bookings made through its travel agency.

### Documentation provided before the meeting

An email will be sent to you in August activating your access to the *Reviewer dashboard* in the [CFI Awards Management System \(CAMS\)](#). The *Reviewer dashboard* is where you will find all the information to conduct your review and where you will enter your preliminary ratings.

For more information on how to use the CFI reviewer portal please consult the following document: [Getting started with the CFI Awards Management System \(CAMS\) — An overview document for reviewers](#).

To access the review material and assessment grid, simply click on the committee name to bring you to the review and documentation page. On this page you will find the relevant reference materials such as the Guidelines for Multidisciplinary Assessment Committees and CFI MAC report template, as well as key details about the meeting.



There are two tabs on this page: 1) the “Project material” tab; and 2) the “Your review” tab.

### 1) “Project material” tab

On this page you will find:

- Proposals and associated institutional strategic research plans. Please note that the institutional strategic research plans are not used for this competition.
- Expert committee reports (available in late August 2014)

All of the material in this tab can be downloaded in a zipped file by clicking on the “Download” button. Please note that it may take the system a few minutes to prepare the file for download.

### 2) “Your review” tab

The projects individually assigned to you will be listed in a table. Clicking on a given project number will bring you to the review form page for this project. For each criterion standard, you will need to select the rating that best reflects your assessment. Once you are done your assessment of the projects assigned to you, you must then submit them to the CFI by clicking on the submit button. This must be completed by **October 14, 2014**. For convenience, you will also be able to download all of your preliminary ratings into a single excel file for use at the meeting.

#### Pre-meeting briefing

Members of the CFI staff will maintain regular contact with committee members by email or telephone before the meeting to ensure all MAC members have the necessary information to conduct their review.

Once all members have activated and accessed their CAMS account, CFI staff will schedule a quick briefing session with members to go over the review material found on the CAMS reviewer dashboard. The session may be given to members individually or to all members at once, depending on members’ availability.

#### Preparation for the meeting

Prior to the meeting, you are expected to read each of the proposals and associated expert committee reports. In addition, for those proposals assigned to you for in-depth review you must submit your ratings for the “Governance and Management” and “Benefits to Canada” criteria on-line through the CFI Award Management System ([CAMS](#)) portal no later than **October 14, 2014**. You are not required to submit written comments on the proposals to the CFI; however, we would very much appreciate receiving your notes on the governance and management and benefits to Canada criteria prior to the meeting in order to assist us in preparing for the meeting.

#### MAC meeting

The multidisciplinary assessment committee will convene in person for one and half days in Ottawa on October 21-22, 2014.

At the meeting, the Chair and CFI staff will make introductory remarks and explain the CFI structured merit review process. Thereafter, each proposal will be discussed in turn, allowing approximately 20 minutes per proposal. Each MAC reviewer assigned to the proposal being

discussed will in turn share their preliminary assessment of the proposal before the rest of the committee shares theirs.

For each proposal, the MAC will assess the strengths and weaknesses of the “governance and management” and “benefits to Canada” criteria. Following the discussion, the committee must reach a consensus on the degree to which the proposal satisfies the standards for these two criteria.

After assessing these two criteria, the MAC will then be tasked with determining whether the proposal is of sufficient quality to merit funding (i.e. is fundable) and what level of funding would be most appropriate. This determination must take into account the MAC's own review of the proposal as well as the review by the expert committee. Given the high standard of quality expected of proposals and in light of the intense competition, the CFI expects the MAC to be very selective at this stage of the process.

Finally, having identified the pool of fundable projects, the MAC must recommend to the CFI Board of Directors the subset of meritorious proposals that most effectively support the CFI's mandate, meet the objectives of the competition and represent the most effective portfolio of investments for Canada (see strategic considerations below).

### **Strategic considerations**

In making its final funding recommendations, the MAC should focus on the following strategic considerations:

1. Only the proposals that meet or exceed the overall standards of excellence can be recommended for funding. Excellence must always be the primary driver for funding.
2. This MSI special competition is intended to secure and strengthen unique, national research facilities that support world-class research — the loss of which would represent a serious setback for Canada. In addition to the degree to which the meritorious proposals address the four review criteria, the MAC should consider the national scope and profile of the facility, the impact of CFI funding (or lack thereof), and the profile and distribution of the facility's users.
3. While the preferred CFI approach is to provide applicants with the full funding requested (when fully justified), there may be cases where partial funding may be deemed appropriate. The MAC may consider factors such as the justification for any significant increases in O&M costs over current funding levels and the withdrawal or reduction of existing partner funding. MSI funding is intended to complement existing operations and maintenance (O&M) resources and not displace support provided by current O&M funders.

Other strategic considerations may be considered as deemed appropriate by the MAC, however, distributive approaches (e.g. across the board cuts to all projects simply to fund more projects; attempts to ensure regional parity in funding; etc.) are not acceptable.

### **Committee reports**

A brief report will be written for each proposal reviewed by the MAC. The report will include the consensus assessment of each criterion reviewed by the MAC, substantiated by comments on the strengths and weaknesses. The report will also contain the funding recommendation for the proposal including a justification for the recommendation and amount recommended.

Committee reports are normally drafted by CFI staff shortly after the meeting, and finalized in consultation with the Chair.

## **OFFICIAL LANGUAGES**

The CFI offers its services in both of Canada's official languages: French and English. Committees must ensure that all applications in either official language receive a full and detailed evaluation. The CFI should be advised if a committee member is assigned an application in a language he or she does not understand. Committee deliberations will be conducted in English.

## **FUNDING DECISIONS**

The CFI Board of Directors will make the final decision on funding for each proposal at its November 2014 meeting. Following this meeting, the applicant institutions will receive the review materials for their proposals as well as the membership of the expert committee(s) and the MAC.

## APPENDIX 1 – ASSESSMENT CRITERIA

*For review by the multidisciplinary assessment committee*

Governance and management	Criterion standards
	<ul style="list-style-type: none"> <li>i. <u>Best practice</u>: The MSI adopts best practices in governance appropriate to the size and complexity of the facility, including long-term strategic planning.</li> <li>ii. <u>Management plan</u>: To realize its objectives, the facility implements a high-quality management plan.</li> <li>iii. <u>Access</u>: The facility has an established access policy and is openly accessible to, and used by, a broad range of national and/or international users from diverse sectors, as appropriate to the nature of the facility.</li> </ul>

**❶ All aspects must be addressed**

1. Describe the governance structure of the MSI, including the composition and mandate of each of its committees and affiliations of its members. Compare this to best practices in governance of similar facilities or organizations.
1. Explain how the MSI is accountable to its lead institution, and if applicable, to member institutions. Outline the priority research directions envisioned for the next three years and explain how the MSI will measure its success in achieving its objectives. Include performance measures, if available.
2. Summarize the MSI's management plan and describe the current management structure and support available.
3. Identify the MSI's key risks and mitigating strategies.
4. Describe the process to allocate access to the facility. Provide the annual number of requests received over the past three years, as well as the number accommodated. Provide quantitative evidence demonstrating the breadth and diversity (e.g. varied disciplines and sectors) of users of the facility.

Benefits to Canada	Criterion standards
	<ul style="list-style-type: none"> <li>i. <u>Benefits to Canada</u>: The research and technology development enabled by the MSI will lead to social, health, economic or environmental benefits to Canada, including the development of new or improved products, processes, services, public policies, and/or sustainable job creation.</li> <li>ii. <u>Transfer of research results</u>: The MSI ensures that appropriate measures are taken to transfer the research results in a timely manner.</li> </ul>

**❶ All aspects must be addressed**

1. Describe the single most significant benefit to Canada realized to date based on research supported by the facility.
2. Describe the potential benefits to Canada (e.g. new or improved products or processes, public policies, job creation) that will be enabled by the facility stemming from the projects outlined in the "Scientific excellence" criterion. Specify the timeframe over which these benefits are expected to occur.
3. Identify potential end users of the research and technology development results.

4. Describe the facility's plans for the transfer of research results to these end users, including the knowledge transfer pathway to private and public sector users.

*Reviewed by the expert committees*

<b>Scientific excellence</b>	<p><b>Criterion standards</b></p> <ol style="list-style-type: none"> <li>i. <u>Competitiveness</u>: The facility is internationally competitive and ranks among the leading comparable facilities in the world.</li> <li>ii. <u>Research programs</u>: The facility supports innovative and leading-edge research programs and is used by researchers of the highest calibre.</li> <li>iii. <u>Highly qualified personnel</u>: The MSI attracts highly qualified personnel (HQP) of the highest calibre (including technicians and professionals) and allows them to acquire high-level skills for research and other careers.</li> </ol>
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**❗ All aspects must be addressed**

1. Demonstrate that the facility is unique in Canada, and identify any similar facilities worldwide. Describe how the facility compares with the world's best.
2. Based on the principal users for whom CVs were provided and other key users:
  - a. Describe recent (within the last five years) and planned research or technology development activities enabled by the facility and their transformative and innovative aspects; and
  - b. Highlight the key accomplishments of the users that demonstrate they are leaders in their relevant research or technology development domains.
3. Provide the number and type (e.g. technician, graduate student, research associate, etc.) of HQP attracted to the facility in the past five years.
4. Describe the high-level skills acquired by the HQP and their relevance to careers in research and other fields (e.g. provide quantitative information about the career path of HQP who have used or been employed by the facility in recent years).

<b>Enhancement of capacity for innovation</b>	<p><b>Criterion standards</b></p> <ol style="list-style-type: none"> <li>i. <u>Specialized capabilities</u>: The facility offers highly specialized capabilities that are not standard in a discipline or research area and are not readily available to Canadian researchers.</li> <li>ii. <u>Needs</u>: There is a demonstrated need for O&amp;M support to fully exploit the scientific capabilities of the facility.</li> </ol>
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**❗ All aspects must be addressed**

5. Describe the research facility's highly specialized technical capabilities (not the research conducted at the facility) and demonstrate — through comparison to other Canadian facilities or institutions — that these are neither standard in a discipline nor readily available to Canadian researchers.

6. Describe the expertise and specialized support (e.g. technical staff) available and planned, as well as how this support contributes to realizing the objectives of the MSI's strategic plan.
7. Describe how the requested funding will allow the facility to fully exploit these capabilities, to operate at an optimal level and allow it to address unmet needs of the user community.
8. Describe the plan for maintaining the current sources of funding, securing and diversifying sources of funding, and contingency plans for a funding shortfall, where appropriate.

## APPENDIX 2 – CONFLICT OF INTEREST POLICY

The Canada Foundation for Innovation (CFI) must meet the highest ethical and integrity standards in all that it does in order to continue to merit the trust and confidence of the research community, the government and the public. CFI review committee members, external reviewers and observers must meet the highest standards of ethical behaviour to maintain and enhance public confidence in the CFI's ability to act in the public's best interest and for the long-term public good. Where a conflict arises between private and public interests, review committee members, external reviewers and observers will be expected to take the necessary measures to ensure that the public interest is protected.

### Definition

A conflict of interest is a conflict between a person's duties and responsibilities with regard to the review process, and that person's private, professional, business or public interests. There may be a real, perceived or potential conflict of interest when the review committee member, external reviewer or observer:

- would receive professional or personal benefit resulting from the funding opportunity or proposal being reviewed;
- has a professional or personal relationship with a candidate or the applicant institution;
- has a direct or indirect financial interest in a funding opportunity or proposal being reviewed;

A conflict of interest may be deemed to exist or perceived as such when review committee members, external reviewers or observers:

- 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:
  - 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;
  - been employed by the applicant institution;
  - feel for any reason unable to provide an impartial review of the proposal.

Note: The CFI reserves the right to resolve areas of uncertainty and to determine if a conflict exists.

### APPENDIX 3 – MAC MEMBERSHIP

MSI 2014 Special Competition MAC Membership	
Chair	
<b>Dr. Gregory Fahlman</b>  Director General , Herzberg Institute Of Astrophysics National Research Council of Canada Canada	
Members	
<b>Dr. Jim Bristow</b>  Deputy of Science, Department of Energy Joint Genome Institute United States	<b>Neil Burford</b>  Professor & Chair of Dept. of Chemistry, University of Victoria Canada
<b>Ms. Deb deBruijn</b>  University Secretary, Trent University Canada	<b>Dr. Marie D'Iorio</b>  Executive Director, National Institute of Nanotechnology National Research Council of Canada Canada
<b>Dr. Franziska Grieder</b>  Director, Office of Research Infrastructure Programs National Institutes of Health United States	<b>Dr. Jacques Magnan</b>  Senior Scientific Lead, Canadian Partnership for Tomorrow Project Canada
<b>Mr. Tim Moltmann</b>  Director, Integrated Marine Observing Systems (IMOS) Australia	<b>Dr. Martine Soyer</b>  Adjointe scientifique au chef Institut IRAMIS, Commissariat à l'énergie atomique et aux énergies alternatives France