



## G8 Research Councils Initiative on Multilateral Research Funding

### First Interdisciplinary and Multilateral Call for Proposals: Application Software towards Exascale Computing for Global Issues.

#### Overview

<b>Duration</b>	Two to three years
<b>Application Deadline<sup>1</sup></b>	May 7, 2010 (Preliminary Proposal) June 28, 2010 (Invitation to submit a Full Proposal) August 25, 2010 (Full application, if invited to apply)
<b>How to Apply</b>	See below and  <a href="#">Call Secretariat</a> To apply in French: contact <a href="mailto:international@nserc-crsng.gc.ca">international@nserc-crsng.gc.ca</a> .
<b>Application Form</b>	 <a href="#">Preliminary Proposal</a>
<b>Program Contact</b>	<a href="#">View Contact Information</a>

## Background

The Heads of the Research Councils of the G8 states (G8-HORCs) have established a multilateral funding initiative to create a new framework for conducting international research. The initiative aims at supporting excellent research on topics of global relevance which can best be tackled by a multinational approach. Participating agencies are:

- Canada – Natural Sciences and Engineering Research Council of Canada (NSERC)
- France – Agence Nationale de la Recherche (ANR)
- Germany – German Research Foundation (DFG)
- Japan – Japan Society for the Promotion of Science (JSPS)
- Russia – Russian Foundation for Basic Research (RFBR)
- United Kingdom – Research Councils of the United Kingdom (RCUK)
- United States – National Science Foundation (NSF)<sup>2</sup>

Hereafter, the agencies will be referred to as the “Funding Organizations.” Funding should help researchers to cooperate in consortia consisting of partners from at least three of the participating countries.

<sup>1</sup> All closing dates are midnight, Greenwich Mean Time (GMT).

<sup>2</sup> Italy will not be participating in this call for proposals.

## Objective

This initiative is aimed at supporting excellent research on topics of global relevance which can best be tackled by a multinational approach. Funding should help researchers to cooperate in consortia consisting of at least three partners from three of the participating countries.

For the Funding Organizations, this gives an unprecedented opportunity to work together across a broad range of disciplines and practice joint funding activities, hoping for increasing compatibility in their funding instruments to allow this kind of science-driven funding without burdening researchers with too much bureaucracy. Finding optimal ways for the Funding Organizations to fund excellent research multilaterally will be of primary importance for this initiative.

## Research Priority Area

### **First call<sup>3</sup>: Application Software towards Exascale Computing for Global Scale Issues<sup>4</sup>.**

Simulation supported by high performance computing infrastructures has become the third pillar of science, complementary to experimentation and modeling. Major challenges of the 21st century, such as climate change, energy, water, environment, or natural disasters, can be addressed by high performance numerical and symbolic simulations that are both data and computer intensive. Computing resources required for these simulations, including improved model resolution, model physics, data analysis and visualization, will reach the exascale ( $10^{18}$  operations per second) level by 2020. However, taking full advantage of these resources for global scale scientific challenges will rely on application software featuring fundamentally new algorithms and data structures capable of exploiting the massive parallelism underlying future exascale level computing.

This multilateral initiative aims at supporting collaborations between experts in research areas related to these global challenges and developers of future exascale platforms, so that they address the relevant needs of the research community during the early design stages of emerging new computing systems. Not only will such collaborations bring together global networks of experts on global topics, they will ensure the rapid and efficient application of new tools as they become available. The focus will be on interdisciplinary projects targeting the exploration and development of open source algorithms and data operations that are resilient, sustainable and scalable to exascale for application solutions to socially relevant global scale issues.

## Expected Results

It is expected that this initiative will:

---

<sup>3</sup> Research topics will be defined separately for each call.

<sup>4</sup> This call acknowledges a preliminary study of application needs and of the matching computing technologies, which was conducted through a series of international workshops ([www.exascale.org](http://www.exascale.org)) held in 2009, gathering an international community of software specialists, application specialists and funding agencies to lay the groundwork for an international activity on exascale development.

- advance knowledge and create innovation
- support top-class researchers
- open up the research experiences for early career researchers
- increase multilateral collaboration

## Requirements

- Each consortium must consist of at least one academic participant (Partner Principal Investigator or Applicant) from a minimum of three different countries represented by the participating Funding Organizations.
- Consortium partners should identify a Leading Principal Investigator (LPI) for each proposal for application, management and communication purposes. The LPI is officially responsible for all communications with the Call Secretariat, including the submission of the Preliminary Proposal and, if invited to do so, the Full Proposal.
- All Applicants must fulfill national eligibility rules for research grant applications as set by their respective Funding Organizations. At NSERC, refer to the [Eligibility Criteria – For Faculty](#) and the [List of Eligible Institutions – Canadian Universities](#) section.
- More than one partner from each country is possible in each consortium. However, consortia should aim for a balanced geographical contribution to the research project.
- A proposal may not include applicants from countries not represented by any of the Funding Organizations.

Applications that are not complete, or do not meet the National Funding Organization's eligibility criteria, will be removed from the competition.

## Budget

Within each selected consortium, funding of the participating researchers is provided by their respective national Funding Organization according to its normal terms and conditions for project funding. Funding is meant for collaborative research, not merely for networking, mobility or communication. The total budget for this call is approximately 10 million € over three years (Partner Principal Investigators can receive approximately 100,000 €, or equivalent, per year). Funding can be provided for projects lasting for two or three years. It is expected that 8-10 research consortia will be funded in this call. It is anticipated that awards will be made by February 2011.

## Application Procedures

The selection of projects to be funded follows a two-step procedure. As a first step, interested consortia are required to submit a Preliminary Proposal, using the forms provided by the  [Call Secretariat](#). Please note that the Forms provided by the Call Secretariat are only available in English. Applicants who wish to apply in French should contact NSERC directly at [international@nserc-crsng.gc.ca](mailto:international@nserc-crsng.gc.ca).

The Preliminary Proposals must be submitted by interested consortia by the deadline date. These proposals will be considered by a scientific review panel that will invite

submission of Full Proposals by the deadline date. After multinational peer review of the Full Proposals, the intention is to fund approximately 8-10 consortia.

It is requested that application forms (Preliminary Proposals and Full Proposals) are submitted electronically as a pdf-file to the Call Secretariat using a secure server. Details will be provided by the Call Secretariat.

## **Selection Criteria**

A successful proposal will combine significant contributions by scientists from at least three of the participating countries and must show an interdisciplinary approach in addressing problems within the scope of the described call theme. The proposal should conform to program aims and designated research fields. Major evaluation criteria are:

- Scientific quality and innovativeness of the joint research plan
- Sound project management, methodological approach, feasibility and appropriateness of the joint research plan
- Added value to be expected from the research collaboration
- Balanced cooperation
- Competence and expertise of teams and complementarities of consortium (inter-disciplinary / inclusion of all necessary expertise)
- Appropriateness of resources and funding requested
- Expected impacts: e.g., scientific, technological, economic, societal
- Opportunities for early career researchers

## **Review Procedures**

### **Selection of Preliminary Proposals and Invitation of Full Proposals**

#### **Preliminary Proposals**

- The Preliminary Proposals will be evaluated by the Panel of Experts. The Panel of Experts consists of approximately 20 scientists, encompassing the necessary expertise to cover the call theme. The Panel of Experts will establish a pool of high quality applications based on the selection criteria. These will then be invited to submit Full Proposals.
- All LPs will receive brief comments on their Preliminary Proposals from the Call Secretariat.

#### **Full Proposals**

- The Full Proposal must be closely based on the successful Preliminary Proposal, and substantial changes to the proposed program of research or consortium membership is not anticipated.
- The LPI should submit one copy of the Full Proposal to the Call Secretariat (for central registration and statistics) and one copy to each of the Funding Organizations which would be responsible for awarding funds to members of successful consortia. There may be additional national application requirements. Further details will be provided in due course.
- Peer review will be coordinated across the participating Funding Organizations using ad hoc and panel review, sharing a common review form. Each proposal will be peer-reviewed by at least three external reviewers, none of whom may be a member of the Panel of Experts.

- Full Proposals will be discussed and recommended for funding by the Panel of Experts based on the selection criteria and the assessments of External Reviewers, with quality of science being the primary criterion in selection. The final award decision will be responsibility of the Funding Organizations.
- All LPIs will receive brief comments on their Proposal from the Call Secretariat.

## Eligible Expenditures/Use of Funds

### Funding and Duties of Funded Consortia

Each PI will receive their funding from his or her national Funding Organization according to their respective rules and procedures of project funding. For NSERC, these rules appear in the [Tri-Agency Financial Administration Guide](#).

## Announcement of Results

- The Funding Organizations will synchronize their communication regarding the results of the selection process to applicants.
- It is anticipated that awards will be made by February 2011.

## Reporting

- Monitoring and reporting requirements will be available at a later date.
- Awardees will be required to acknowledge the funding received from NSERC in all communications and publications resulting from the project funded by the G8 Research Councils Initiative on Multilateral Research Funding.

## Further information

For additional information, application form and procedure, consult the  [Call Secretariat](#).

### NSERC Contact

[international@nserc-crsng.gc.ca](mailto:international@nserc-crsng.gc.ca)