

# CIMVHR ADVANCED ANALYTICS INITIATIVE

## Guidelines for Proposal Document Preparation

### Background:

The CIMVHR Advanced Analytics Initiative is a program that encourages applications from multi-disciplines to submit project proposals to compete for access to funding, computer resources and expertise available through CIMVHR and IBM Canada—researchers interested in applying will include medical resources to accelerate research and improve health of Military, Veterans and/or their families supported by data scientist/computer science experts and architects with skills to combine the medical research with the data analytics and computer science aspects of the proposed project. CIMVHR and IBM are available to discuss the viability of your proposed project prior to completing and submitting the application.

The Initiative funds support priority areas such as, but not limited to,

- **Precision medicine:** medication/treatment selection, order of care, response based treatment
- **Personalized care:** treatment tailored to the individual
- **Military family challenges:** impact of military families' lifestyle on health and well-being
- **CIMVHR target population research data challenges:** addressing privacy, consolidation, access, and mining for academic led research projects

**Deadlines:** Round 2 Final Proposal Application must be submitted to Stephanie Belanger on or before **Monday Oct 23, 2017** for consideration and evaluation.

### Objectives:

The goals of this initiative are to further the understanding and management of complex health issues that result from military service, enhance the development and consolidation of relevant research datasets and support broader collaboration between academia, industry and government focused on this important Canadian population.

To support projects that drive better-consolidated, accessible national research data through data analytics, advanced computing capabilities and emerging AI systems. All of this is in support of innovative discoveries to address health care gaps relative to Canadian military, Veterans and their families.

### Eligible Applicants/Institutions:

Projects must be Academic led by a researcher(s) at a CIMVHR Canadian partner university and with identified collaborators that include a combination of the following:

- Academic Institutions / Research Hospitals
- Commercial (Industry Partners, Small/Medium /Large Business)
- Government

### Expenditures

**Eligible expenditures** – The primary goal of the funding is to support HQP staff involved in the research (Post Docs, PhD Students etc.). As a guideline, any expense that qualifies for MITACS grant funding, would be appropriate. In some cases funding requests may be granted for non HQP costs required to support the research project.

Any identified resources available from IBM or SOSICIP may be requested that do not need to be included in the HQP budget limit of \$200,000

**Ineligible Expenditures** – In general, the funding should not be used for local purchase of equipment or other capital expense. If there is any uncertainty about this criteria, please discuss with CIMVHR/IBM before submitting the proposal.

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## Successful Submission Principles of Governance

The research activities must:

- meet relevant legal requirements for protecting researchers, human subjects, the health and safety of the public, and the welfare of lab animals;
- comply with relevant University and granting agency policies, regulatory or legal requirements that relate to the conduct or reporting of research and scholarly activity;
- be conducted under appropriate approvals, permits or certifications.
- be health related research which uses data analytics, data science, machine learning or similar use of high performance computing in support of the research objectives

### Reporting Requirements:

Unless otherwise agreed in the Project Collaboration Agreement, funds will be released quarterly pending satisfactory progress and reliable reporting, including:

#### 1. Submit a Lay Summary with 1<sup>st</sup> quarterly report

Guidelines available: <https://cimvhr.ca/forum/resources/WritingTheLaySummaryBasics.pdf>

- Provide only the essential context for the research.
- Answer the “so what?” behind your research.
- Address the 5W and 1H
- Use simple sentences.
- Reduce essential arguments to their most straightforward and reader-friendly form to reduce ambiguity.
- 150 word maximum.

#### 2. Milestone Reporting

- **Submit research progress quarterly reports** to the CIMVHR Directorate using template provided.
- **Final Report:** Submit to the CIMVHR Directorate using template provided. Must include impact section, which describes how this project contributes to the enhancement of the health or wellbeing of military members, Veterans or their families, as well as:
  - **Valuation reporting** for purpose of Industrial Regional Benefits reporting
  - **Intellectual Property (IP)** governance including background and forward looking IP

3. **Acknowledgement** of IBM and CIMVHR as sources of funding in all presentations and publications related to this project.

4. **Presentation** at CIMVHR annual FORUM Event

5. **Publication** of project in the Journal of Military, Veteran and Family Health or other academic led journal

## Research Proposal

**Application formatting:** Follow the instructions below in preparing your application:

- Use clear language and avoid technical jargon, ensuring that a lay audience understands the technical terms.
- Maximum of 6 pages including graphs and images (as appropriate), in English.
- Text must be double-spaced using Arial 12 point font.
- Margins must be standard 2cm (3/4 inch) on 8 1/2" x 11" (216mm x 279mm) white paper and include a running header in the top right corner, which clearly states the last name of the PI and the short project title, and page numbers in the bottom right corner.

### Essential application elements:

<b>1. Title of Proposal</b>	Short, clear, relevant and reader-friendly
<b>2. Research question(s) and/or hypothesis(es) Summary</b>	Using non-technical language, state succinctly in 400 words or less, what research question(s) or thematic area this project addresses and why this issue is significant.  How will the research enhance the health and well-being of Canadian military personnel, Veterans and their families?
<b>3. Objectives of the proposed research program</b>	These must be in line with CIMVHR Vision and Priorities:  The health and well-being of Canadian military personnel, Veterans and their families is maximized through world-class research resulting in evidence-informed practices, policies and programs that support key stakeholder identified priorities, such as, but not limited to, precision medicine, personalized care, family challenges, research data challenges related to Canadian military, veterans and family health.
<b>4. Theoretical approach or framework</b>	These must rely on Big Data Analytics and can take several forms, such as, but not limited to, Device Data, Distributed Data, Unstructured Data (i.e. doctors notes, imaging), advanced use of high performance computing, machine learning, AI (artificial intelligence ) or similar technology. The research approach should describe the research methodology as well as how the application of specific data science technology will be used to assist in conducting the research.
<b>5. Methodology rationale</b>	Explain why it was chosen, including the requirement for Advanced Analytics Capability and Resources such as, but not limited to, Parallel Computing, Streaming Analytics, Cloud Access, as well as Software Solutions such as, but not limited to, Streaming Analytics, Algorithm, Big Insight. If a specific IBM technology (software or hardware) is known

	<p>to be required please add that. If access to SOSCIP resources is likely required please be specific about that.</p> <p>FYI more information on SOSCIP can be found at <a href="http://www.soscip.org">www.soscip.org</a></p>
<b>6. Position your project</b>	Explain the novelty of the proposed research within the context of the current knowledge in the field.
<b>7. Partnerships / Collaboration</b>	Describe how each collaborator (academic or industry) will support the proposed project, including, but not exclusive to, academic data scientist/computer science experts (often a PostDoc ), architect skills, medical experts, academic institution or research hospital resources which are not provided by IBM. If there is a known requirement for support from SOSCIP or other IBM supported research delivery organization then please specify it. If there is an existing or expected relationship with IBM Research or other form of IBM supported research (Ex SOSCIP) please include that.
<b>8. Project team and roles</b>	Include affiliation, expertise, and planned involvement, especially who will be providing the data science expertise
<b>9. Methodology rationale</b>	Explain why it was chosen, including the requirement for Advanced Analytics Capability and Resources such as, but not limited to, Parallel Computing, Streaming Analytics, Cloud Access, as well as Software Solutions such as, but not limited to, Streaming Analytics, Algorithm, Big Insight (for a reference of examples of these HPC resources please refer to SOSCIP.org)
<b>10. Timelines</b>	Maximum time frame: 2 years
<b>11. Budget</b>	Approximate budget over a period of no more than two years. (Note: the target project budget is \$200,000 of funding over two years which should primarily be used to fund HQP staff resources. In some special cases, this budget may be exceeded, however this should be discussed with IBM in advance of the application. If specific IBM "in-kind" contributions have been identified during consultation with IBM, these in-kind contributions would, in most cases, be considered in addition to the \$200,000 budget.) Please specify details of the Project budget and the funding or in-kind contributions being requested.
<b>12. Expected Impacts</b>	Describe the potential for impact, including capacity building, such as, but not exclusive to, education, training, skills development, treatment outcomes etc..

<b>13. Disseminate and knowledge translation</b>	Beyond presenting at CIMVHR's Forum and publishing in the JMVFH, how will you plan to disseminate the research findings?
<b>14. Commercialization plan</b>	Commercialization is not a requirement of this research program but if there is an expected commercialization outcome from your project, please describe plans for commercialization that may exist (usually from an industry partner you may have with the project), and how it applies to the military/veteran population. If you believe there is no potential for commercialization of your research outcome, please specify that as well. Note: Any project that may requires access to SOSICIP HPC platforms during the project will need to explain commercialization outcomes during the subsequent SOSICIP application phase.

### Presentation Standards for Submitted Documents

- a. All submitted documents related to the application must be prepared according to the standards provided. CIMVHR Directorate reserves the right to reject applications not prepared accordingly.
- b. Submit a certified translation of Non-English supporting documents.
- c. Be mindful that a multidisciplinary selection committee (non-specialist audience) will review your proposal. Use clear language.

## Evaluation Criteria

CIMVHR-IBM Advanced Analytics Initiative projects will be evaluated based on 3 weighted criteria:

### **Criterion 1: Alignment with Initiative themes and relevance of topic to theme chosen**

### **Criterion 2: Strategic Benefits**

- Does it clearly demonstrate a pathway to support innovative discoveries that address health care gaps relative to Canadian military, Veterans and their families?
- Will the project help with or lead to any consolidation and/or improved access to national research data that can be helpful in future Military/ Veterans Health Research?

### **Criterion 3: Enduring Collaboration**

- Clearly demonstrated excellence of the partner academic and industry organizations
- Readiness and Ability of the project team to deliver on the proposed activities (For Example access to appropriate skills, data, external resources and experience with the technology needed to conduct the research)
- Clear grasp of the research subject and the steps required to achieve the research objectives
- Potential for project collaboration and enduring partnership with Industry Partners, Government, CIMVHR/IBM as appropriate
- Supports capacity building (education, training, skills development, especially for HQP)
- Relevant to national interest

The proposal ranking and selection is expected to be competitive, only the best overall proposals will be selected for funding. The review and final evaluation of the proposals will be conducted by CIMVHR and IBM and then by the CIMVHR SAC (Scientific Advisory Council) which will be made up of experts from a variety of CIMVHR associated universities. CIMVHR SAC members will be recused from evaluating proposals from the university that the SAC member is from.