Announcement of Opportunity for Health & Life Sciences Data and Sample Mining or Research Models - Canadian Space Agency, 2022/2023

Sponsor

Canadian Space Agency (CSA)

Program

Health & Life Sciences Data and Sample Mining (DM) or Research Models (RM)

For More Information

Please visit the Announcement of Opportunity webpage [1].

Description

In the future, human exploration of space is expected to extend beyond Low Earth Orbit (LEO) to the orbit and surface of the Moon, and ultimately to distant targets such as Mars. The resulting expeditions will require extended periods of exposure to weightlessness and space radiation, with confinement and isolation in the extreme environment of space, all of which are linked to substantial health and performance risks.

The Canadian Space Agency (CSA) is interested in human spaceflight and maintains a highly qualified Canadian astronaut corps capable of participating in space exploration missions. Also, in support of the vision and priorities of the recent Space Strategy for Canada [2], the CSA aims to enable scientific opportunities and global partnerships, and to harness space to solve everyday challenges for Canadians.

To achieve this, the CSA's Health and Life Sciences (HLS) group conducts activities to generate knowledge in fields that sustain human space flights, mitigate health risks and develop countermeasures for those missions. Since time and resources on the International Space Station (ISS) are limited, CSA aims to broaden science opportunities in order to enhance and supplement flight investigations on the ISS and to optimize utilization of the CSA's ISS resource allocations.

The intent of this Announcement of Opportunity (AO) is to provide financial support to researchers at Canadian Universities and post-secondary institutions to conduct science investigations that will lead to a better understanding of human spaceflight risks while

contributing to improve remote medicine and health benefits here on Earth.

More specifically, this AO is divided in two different categories, as defined below:

Topic 1 (DM)

Topic 1 (DM) solicits proposals for scientific analysis, using databases or samples derived from existing collections to improve the understanding of the risks of spaceflight or for initial validation of new countermeasures. The studies selected for this Topic are expected to be precursors of Canadian investigations on the ISS.

Several agencies and institutions have supported the establishment of dedicated databases and sample repositories collecting the results from space-related studies on human subjects and non-human model organisms (see Table 1 [3] for examples of databases and repositories). These studies include investigations in space and on Earth using analogue populations or other relevant models of spaceflight. In addition to the use of publicly available datasets and repositories, researchers can also use datasets from previous flight or analogue experiments, either archived by the original investigator at their institution, or with an intent to obtain data or samples from the original investigator. Applicants must provide in their proposal justification of the intended use of datasets or samples, to test or generate new hypotheses regarding the effects of spaceflight on health of men, women, and gender-diverse people, or to enhance the value of existing data, through development of new insights in regard to the original datasets or samples.

Topic 2 (RM)

The focus of research to be funded under this Topic 2 (RM) will be to use non-human subject research models (for example animals, organoids, cell culture, or microorganisms) to investigate space-related health risks (identified in Table 2 in Section 3.3) and identify sex differences, if applicable. The CSA encourages innovative approaches, such as synthetic biology (i.e. modification of living systems) that support health risk reduction), diagnosis or health care during space missions (prevention, detection or treatment of acute or chronic health issues, infectious disease, radiation exposure, stress, etc.). However, the core of the proposed studies must focus on living systems.

Well-designed non-human subject research model studies are valuable for improving the understanding of the risks of spaceflight or for initial validation of new countermeasures. The studies targeted in this Topic are expected to lead to countermeasures related to human spaceflight health risks, and to be precursors of Canadian investigations on the ISS. In other words, there must be a solid conceptual link between the proposed work and future studies that require access to space. Proponents must also substantiate the validity of the link between the chosen experimental system(s) and human biology.

Researchers can propose research methodology relevant to weightlessness (for example: centrifuges, clinostats, rotating bioreactors) or space radiation. The costs of access and travel to facilities (e.g. purchase of clinostats or access to beam facilities for radiation studies) must be included in the applicant's budget.

Eligibility

Eligible Recipients

Eligible recipients (beneficiaries) for grants are:

Canadian post-secondary institutions, defined as Canadian universities or colleges (including CEGEPs in Quebec) that have provincial accreditation to grant degrees, diplomas, certificates or other recognized qualifications;

Not for profit organizations established and operating in Canada that have research included in their institutional mandate, and that have a standing Research Ethics Board / Animal Care Committee (when required), or that delegate this responsibility to another institution's recognized board/committee.

Eligible Projects

Projects eligible for funding under this AO are those wherein eligible recipients submit projects for which a Canadian researcher is the Principal Investigator (PI) for a new research project. Projects must be original initiatives presented to the CSA. Projects presented to other space agency-led selection processes are not eligible under this AO.

For Topic 1 (DM):

As described in Section 1, eligible projects will focus on scientific analysis, using datasets or samples derived from existing collections to improve the understanding of the risks of spaceflight on health of men, women, and gender diverse people (identified in Table 2 in Section 3.3) or the identification of new potential countermeasures to these risks.

For Topic 2 (RM):

As described in Section 1, eligible projects will use non-human subject research models such as animals, organoids, cell culture, or microorganisms to investigate space-related health risks (identified in Table 2 in Section 3.3) or new countermeasures to these risks. However, the core of the proposed studies must focus on living systems.

All development phases necessary for a project are eligible. Any logical breakdown or combination of these phases can constitute a funded project. However, breaking down a project into numerous phases to obtain more than the maximum grant or contribution is not allowed. Furthermore, even if the maximum funding for one project is not reached, the completion of a funded phase does not automatically guarantee funding of the remaining phases.

Funding Availability

Topic 1 - Data and Sample Mining (DM)- up to $70,000 for a maximum duration of one (1) year.

Topic 2 - Research Model (RM)- up to $150,000 for a maximum duration of two (2) years.

Indirect Costs

Not to exceed 20% of eligible costs for universities & post-secondary institutions.

Project Duration

Up to two (2) years depending on topic.

Deadlines

If College-level review is required, your College will communicate its earlier internal deadlines.

Type	Date	Notes
Internal Deadline	Monday, January 9, 2023 - 4:30pm	Please submit application and signed OR-5 form to research.services@uoguelph.ca [4] by January 9, 2023.
External Deadline	Monday, January 16, 2023 - 11:59pm	Completed application to be submitted via CSA's Electronic Proposal Portal [5].

How to Apply

Please visit Section 4 on the Announcement of Opportunity webpage [1] for a listing of required documentation. Completed documentation can be submitted electronically via the Electronic Proposal Portal [6].

Process for electronic submission:

- The applicant must complete an account creation request at the Electronic Proposal Portal [6]. Upon receipt, the CSA will send an email with instructions on how to connect to the CSA secure filer system to allow you to upload documents securely. Please note that Chrome is the browser of choice for submissions. Supported browsers are Google Chrome, Firefox and, Internet Explorer with some restrictions.
- Allow up to seventy two (72) hours for the CSA to send an email confirming the account creation as well as instructions (user guide) on how to access the platform. It is strongly recommended that the account creation request be submitted no later than December

20th, 2022. If technical issues cannot be resolved, applicants must submit their application by mail. Applicants are strongly encouraged to upload their complete application well before the submission deadline;
- Using the temporary password assigned by the CSA, login [7] to the secured portal to upload protected documents;
- Please refer to the user guide [8] for instructions on how to securely upload documents.
- Applications must be submitted (successfully uploaded) by applicants no later than 2:00 PM (EDT), January 16th, 2023;
- Incomplete or late applications shall not be considered. A late application has an electronic timestamp on the CSA system after the deadline above.

For Questions, please contact
Office of Access to Information and Privacy
Canadian Space Agency
Tel.: 450-926-4866
Email: aiprp-atip@asc-csa.gc.ca [9]

Office of Research

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Alert Classifications**Category:**
Funding Opportunities and Sponsor News

Disciplines:
Health and Life Sciences
Information and Communications Technology
Physical Sciences and Engineering

Source URL:https://www.uoguelph.ca/research/alerts/content/announcement-opportunity-health-life-sciences-data-and-sample-mining-or-research-models

Links
[1] https://www.asc-csa.gc.ca/eng/funding-programs/funding-opportunities/ao/2022-health-life-sciences-data-and-sample-mining-or-research-models.asp#1
[2] https://www.asc-csa.gc.ca/eng/publications/space-strategy-for-canada/
[3] https://www.asc-csa.gc.ca/eng/funding-programs/funding-opportunities/ao/2022-health-life-sciences-data-and-sample-mining-or-research-models.asp#table-1
[4] mailto:research.services@uoguelph.ca
[5] https://www4.asc-csa.gc.ca/PPE-EPP/eng/AccountRequest/DA98887679B78718E0530D0011AC8225
[6] http://www4.asc-csa.gc.ca/PPE-EPP/eng/AccountRequest/DA98887679B78718E0530D0011AC8225
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EPP/Resources/pdf/Guidelines_for_the_use_of_protected_document_submission_system.pdf
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