

## **Canadian Space Agency (CSA): Health and Life Sciences (HLS) Data and Sample Mining, HLS Research Models and Human Analog Studies**

### **Sponsor**

Canadian Space Agency (CSA)

### **Program**

2019 - Health and Life Sciences (HLS)

### **For More Information**

Additional information can be found at the following links:

[Notice – Potential announcements of opportunity for science investigations relating to human health risks in space](#) [1]

[Canadian Space Agency 2018–19 Departmental Plan](#) [2]

### **Description**

To achieve the goal of enabling future human long space missions on the International Space Station (ISS) and beyond Low Earth Orbit (LEO), research initiatives are needed to better understand the health risks associated with spaceflight and to develop countermeasures that mitigate these risks. The purpose of this Advanced Notice (AN) is to inform the Canadian academic community that the Canadian Space Agency (CSA) intends to proceed with the posting of three Announcements of Opportunity (AOs) as part of its Grants and Contributions (G&C) Program.

The intent of these AOs will be to provide financial support to researchers in 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 care benefits here on Earth.

More specifically, the CSA seeks to:

- Create an opportunity for new space life science experiments to generate new

knowledge and insight into the risks of human space flight to keep astronauts healthy in space;

- Expand the range of research expertise that is applied to research on human spaceflight health risks;
- Advance understanding of similar health issues or applications on Earth, that could contribute to improving health care for Canadians;
- Foster training of highly qualified personnel in space Health and Life Sciences (HLS).

The following Opportunities are being considered:

## 1. HLS Data and Sample Mining

- Scientific analysis using existing data sets or biological samples generated from previous studies.

## 2. HLS Research Models

- Non-human research models (examples: organoids, organ-on-a-chip, model organisms) for investigations of space-related health risks (e.g. radiation, medical countermeasures) to expand research approaches.

## 3. Human Analog Studies

- Human-subject space analog studies that reproduce one or more aspects of the space environment, such as variable gravity, inactivity, physiological fluid shifts, isolation, or confinement.

## Eligibility

Although evaluation criteria will be specific to each AO, the following planned eligibility criteria should be considered:

- Canadian universities and post-secondary institutions are eligible participants
- The project must be aligned with CSA priority outcomes as stated in the [2018-2019 Departmental Plan](#) [2]: Space research and development advances science and technology. Consideration will be given to activities that are aligned with the mandate to identify, understand, mitigate or eliminate health risks associated with human space flight, and to understand and address the needs of humans during those missions.
- The project should foster the continuing development of a critical mass of researchers and highly qualified people in Canada in areas relevant to the priorities of the CSA, as stated above.

The standard evaluation process from the CSA's G&C Program will be used, including assessment of Scientific Merit, Benefits to Canada, Feasibility, Resources and Risks. In addition, the following factors (among others) will be considered:

- Demonstration that steps have been taken to secure access to data and samples, or participate in Human Analog projects or other relevant research campaigns;
- Letters of agreement or support from relevant institutions, agencies, or co-investigators that would demonstrate solidity and maturity of the project;
- Proposals including co-funding plans are encouraged;

- Involvement of HQP and training of new HQPs and students;
- Data management plan, and plan to disseminate knowledge and data to relevant data archives and open-access publications.

## **Funding Availability**

Funding is being considered on an Opportunity basis as follows:

1. HLS Data and Sample Mining
  - Maximum amount per project: up to \$70,000
2. HLS Research Models
  - Maximum amount per project: up to \$150,000
3. Human Analog Studies
  - Maximum amount per project: up to \$200,000

It is foreseen that the funding opportunities will support research initiatives taking place in Canada but may also support participation of Canadian researchers in international research activities such as European Space Agency (ESA) and National Aeronautics and Space Administration (NASA) Human Analog initiatives, or access data or samples from national or international databases.

## **Indirect Costs**

To be determined

## **Project Duration**

Project duration is specified on an Opportunity basis as follows:

1. HLS Data and Sample Mining
  - Maximum duration of the project: up to one (1) year
2. HLS Research Models
  - Maximum duration of the project: up to two (2) years
3. Human Analog Studies
  - Maximum duration of the project: up to two (2) years

## **Special Notes**

This Advanced Notice is published to alert researchers of these potential AOs and encourage them to seek agreements with sources of data or samples, identify relevant model organisms or organoids for human space flight research, or look for opportunities to join human analog projects. The CSA intends to publish these AOs in the late spring of 2019.

This Advanced Notice should not be considered as a commitment to issue a subsequent AO. No grant agreement will be established based on this AN. The issuance of this AN is not to be

considered in any way a commitment by the Government of Canada, nor as authority to those interested in participating to undertake any commitments that could be charged to Canada.

This Advanced Notice is subject to change. If necessary, these changes will be published on the CSA website. It is recommended checking the site regularly. No questions will be answered by the CSA at this stage.

## How to Apply

To be determined.

Alert Classifications **Category:**

Funding Opportunities and Sponsor News

### Disciplines:

Health and Life Sciences

Information and Communications Technology

Physical Sciences and Engineering

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### Source

**URL:** <https://www-research.uoguelph.ca/research/alerts/content/canadian-space-agency-csa-health-and-life-sciences-hls-data-and-sample-mining-hls-research>

### Links

[1] <http://asc-csa.gc.ca/eng/funding-programs/funding-opportunities/ao/2019-health-and-life-sciences-notice.asp>

[2] <http://www.asc-csa.gc.ca/pdf/eng/publications/dp-2018-2019.pdf>