Four teams selected for CAN-RGX 2022-23

January 9, 2023

Toronto, ON: Students for the Exploration and Development of Space (SEDS-Canada) has selected the four teams among a pool of applications for the 2022-23 Canadian Reduced Gravity Experiment Design Challenge (CAN-RGX). The competition challenged post-secondary students attending Canadian universities and colleges to submit a proposal for a small scientific payload to be tested onboard the National Research Council of Canada's (NRC) Falcon 20 research aircraft, capable of simulating reduced gravity environments, similar to those found in the International Space Station.

Two students per team will get to fly onboard the aircraft as Mission Specialists to operate their experiments. Each flight will consist of 12 parabolic maneuvers to allow students to run their experiments and collect all the necessary data for subsequent analysis on the ground. The Falcon 20 is one of the world's best microgravity planes; it provides the closest environment to that of real zero gravity. Each parabola will provide up to 20 seconds of near zero-G. As the NRC's primary research aircraft, the Falcon 20, is capable of helping the next generation of researchers realize their future potential in the space sector. With support from the NRC and the Canadian Space Agency (CSA), CAN-RGX is the only competition of its kind in Canada.

The selected teams include:

- **Team UBC Rocket** from the **University of British Columbia** aims to investigate the effectiveness of tissue plasminogen activator (TPA) in breaking down blood clots in microgravity. This project will contribute to better understanding of pharmacological interventions that can be implemented in case of thrombosis events in space.

  [Team media contact: Kassandra Hawes]

- **Team SpiderSAT** from **University of Alberta** will test the ability of a Kraton G1645 gecko adhesive net to capture debris-like material, similar to space debris. This project will contribute to developing a cost-effective dry adhesive net to capture space debris in Earth's orbit.

  [Team media contact: Lauren Dara]

- **Team CRISiS (Cardiovascular Resuscitation Identification Simulator in Space)** from **Concordia University** aims to engineer a new class of cardio-pulmonary resuscitation (CPR) manikins as a testing platform to provide real-time feedback of volumetric flow rate within a cardiovascular fluidic system. This project is a stepping-stone in establishing a "gold standard" CPR for human spaceflight.

  [Team media contact: Zoe Lord]

- **Graviteam** from the **University of Calgary** aims to investigate and further understand passive phase separation and open capillary channels in zero-gravity environments. By developing more complex channel geometries, the team hopes to achieve more efficient separations in space.

  [Team media contact: Anjali Patadia]

The four teams must now complete the Preliminary Design Review, which they will present to a panel of judges including experts in microgravity sciences from CAN-RGX's collaborating agencies, including the NRC and the CSA. After finalizing their designs, the teams will build their experiments in order to submit the next milestone, the Critical Design Review. The experiments will then be integrated into the NRC's Falcon 20 aircraft in preparation for the Flight Campaign scheduled for July - August 2023 at the NRC's Flight Research Laboratory in Ottawa, ON.

-x-

About SEDS-Canada

SEDS-Canada is a national, student-run, non-profit committed to supporting and empowering students interested in space, advancing the Canadian space sector, and advocating for peaceful exploration and development of space.

Join us as an industry partner! Please contact us for sponsorship opportunities.

Follow us on social media!
Twitter: @sedscanada
Facebook:
facebook.com/sedscanada
Instagram: @sedscanada

CAN-RGX Media Contacts:
Alina Kunitskaya
Projects Chair
alina.kunitskaya@seds.ca

Louis Burelle
CAN-RGX Project Manager
louis.burelle@seds.ca