Four teams selected for CAN-RGX 2021-22

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Toronto, ON: Students for the Exploration and Development of Space (SEDS-Canada) has selected the four teams among a pool of applications for the 2021-22 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 NRC and the Canadian Space Agency (CSA), CAN-RGX is the only competition of its kind in Canada.

The selected teams include:

- **Team Mission Spacewalker** from the **University of Alberta** is doing space robotics research. They plan to test electroadhesive climbing robotics in microgravity. Electroadhesion is an exciting technology that allows robots to adhere to a wide range of materials and could facilitate the use of robotics for maintenance in space.

  [Team media contact: Makenna Kuzyk]

- **Team MEMEs (Microgravity Experiment Modules Establishment)** from **University of Alberta** is doing research in the field of 3D printing and additive manufacturing. They will study materials surface interactions for binding jetting technology. Improved understanding of this technology under microgravity conditions could enable new ways for in-space manufacturing.

  [Team media contact: Kinston Wong]

- **UVIC Rocketry** from the **University of Victoria** is studying the formation of microfluidic water in oil droplets under microgravity conditions. Improved understanding of the fundamental forces that govern microfluidic droplet formation in microgravity could facilitate the use of microfluidics for spaceflight applications, such as biological assays to monitor health in space.

  [Team media contact: Scott Pederson]

- **Team MICRO2** from **Concordia University** is investigating the use of a novel microfluidic platform to study the hyper- and micro-gravity impact on genes related to the human immune response.

  [Team media contact: Alessio Cusmano]

The four teams must now complete the next phase of their project, the Preliminary Design Review, which they will present to a panel of judges including experts in microgravity flight 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 June 2022. This year's competition may see the Falcon 20 travel to Calgary, Alberta for the Flight Campaign (TBD).

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About SEDS-Canada

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