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## Canadian University Students Set to Fly Their Experiments in Microgravity Next Month

June 22, 2024

**Ottawa, ON** - Four university teams are set to fly their out-of-this-world experiments in microgravity, as part of the Canadian Reduced Gravity Experiment (CAN-RGX) Design Challenge. CAN-RGX challenges post-secondary students from across Canada to fully design, build, and test a small experiment in the microgravity environment of parabolic flight, on-board the National Research Council of Canada's (NRC) Falcon 20 aircraft. This year's competition culminates in a flight campaign which will be held at École nationale d'aérotechnique in Longueuil, QC from July 22 - 26.

Over the past year, these teams have worked hard to design, integrate, and test their scientific experiments:

- **CMD-SAT (University of Alberta):** The team will study the behaviour of compliant hinges in microgravity environments. In particular, they will study the moment of inertia, the angle at which the hinge opens, and any parasitic motion of the compliant hinge in microgravity. Each hinge will be subjected to thermal cycling and stowage. The team aims to employ this kind of hinge design for AlbertaSat's upcoming satellite mission.
- **SAIT Supernovas (Southern Alberta Institute of Technology):** The team aims to investigate the behaviour of an unmanned, electrically powered craft in microgravity. The team will study the maneuvering abilities of the craft while traveling at both low and high speeds, propelled using electrohydrodynamic ion thrusters and stabilized using a mechanical and digital gyroscope. The goal of the project is to further the development of a vehicle that can be used for various applications in outer space.
- **Insecta (Carleton University):** The team will study the effects of microgravity on edible crickets, which can be used as a source of nutrition in deep space missions. Their novel experiment will analyze cricket growth, immune response, and viral loads after exposure to microgravity. The team will also use antivirals as a mitigation strategy for stress induced immune responses. Their results are intended to provide a comprehensive dataset to help pioneer insect astro-farming research.
- **Waterloo Space Soldering Team (University of Waterloo):** This team aims to test whether solder joints formed in microgravity can be improved using a centrifuge, a device commonly used to simulate Earth's gravity. The team has hypothesized that this will result in solder joints with reduced porosity and improved quality. The overall goal is to improve the quality of in-space solder joints to allow replacements of electrical components in long-duration space missions.



Students for the Exploration and Development of Space  
Étudiants pour l'Exploration et le Développement Spatial

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CAN-RGX is hosted by the Students for the Exploration and Development of Space (SEDS-Canada) in collaboration with the the National Research Council of Canada and the Canadian Space Agency.

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