



UVIC RACKETRY

SPONSORSHIP BROCHURE
2020

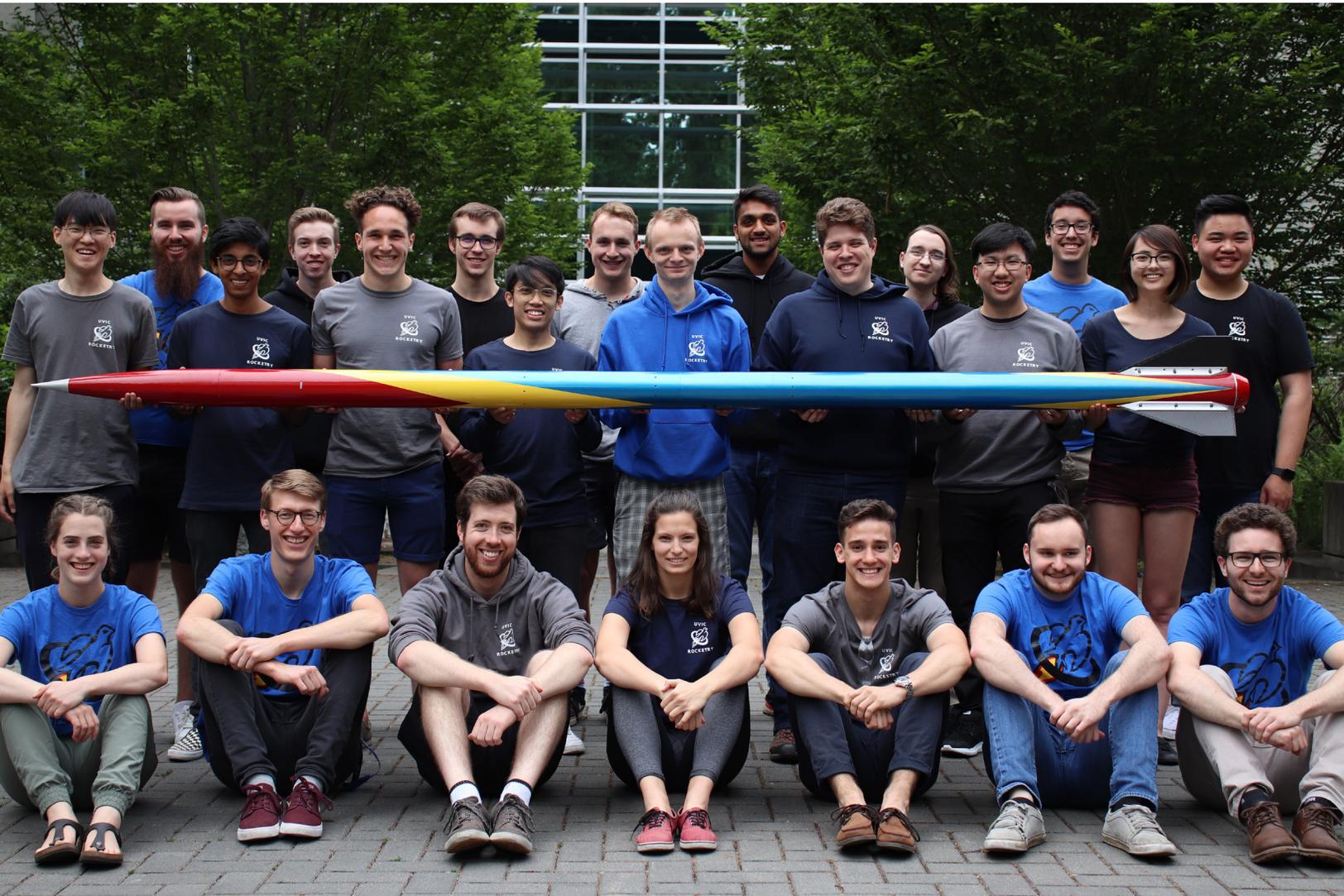




MEET THE TEAM

WHO WE ARE

The UVic Rocketry Team (UVR) is a non-profit group of students who work on their own time to design and build competitive sounding rockets. We are entirely funded through sponsorships and grants. Our members include students studying mechanical, electrical, and software engineering, physics, biology, business, and more. We welcome members from all backgrounds, and encourage diversity and collaboration.



WHAT WE DO

UVR develops rockets to be launched at the annual Spaceport America Cup (SAC) hosted by the Experimental Sounding Rocket Association. Our first appearance at this international event in June 2016 resulted in a third place finish out of over 40 teams in the basic category. In SAC 2017, our team placed 1st in the Space Dynamic Laboratory Payload Challenge.

WHY WE DO IT

Our members dedicate their time and energy to this team in order to have fun while gaining teamwork skills and technical knowledge. They partake in a wide range of hands-on tasks in areas such as propulsion, aerodynamics, composite structures, Guidance, Navigation, and Control (GNC), recovery systems, testing, launch operations, and scientific payload development.



SPONSORSHIP

WE NEED YOUR HELP

UVic Rocketry is a not-for-profit group of students working on our own time during academic semesters to make this rocket a reality. We are entirely funded through sponsorships, grants, and donations. We do our best to balance cost and quality, but cutting corners doesn't lead to mission success.

	Titanium \$100+	Bronze \$500+	Silver \$1000+	Gold \$2500+	Platinum \$5000+
Logo on the Website					
Logo on the Rocket					
Logo on Team Uniform					
Promotion on Social Media			Mention	Featured	Custom

YOU could be the difference that gets our rockets off the launch pad!

PROJECTS

SPACEPORT AMERICA CUP

The Spaceport America Cup is an intercollegiate competition held in New Mexico where hundreds of post-secondary rocketry teams from around the world compete against each other in various categories. In 2016, UVR placed 3rd overall out of 52 teams in the 10,000ft commercial-off-the-shelf (COTS) category and earned an honourable mention in the Payload Competition. In 2017 and 2019, UVR placed 1st overall and received an honourable mention, respectively, in the Payload Competition. Despite the rapid unscheduled disassembly of Hyak-1 and Hyak-2 in the (supersonic) 30,000ft COTS category, we have achieved new heights and have broken the sound barrier. From the lessons learned in Hyak-1 and Hyak-2, we are excited for redemption in Hyak-3.

MULE-1 HYBRID STATIC ENGINE

The Mule is a hybrid static engine that uses liquid nitrous oxide and a paraffin wax fuel grain to generate thrust. A hybrid rocket engine consists of a solid propellant and a liquid oxidizer which are always separated. Thus, it is a safer option for technological development than a solid rocket motor. In order to optimize this engine, we preform various tests such as static hot-tire tests, cold-flow tests, and hydrostatic tests. The data collected from Mule-1's first hot-fire test in early 2020 will be used to develop UVR's first hybrid rocket, Ramses-1, which will be launched at Spaceport America Cup 2021.



This project involves learning a variety of essential engineering skills such as instrumentation, controls engineering, thermodynamic analysis, computational fluid dynamics, and mechanical design. After conducting multiple cold-flow tests, the team is well on its way to performing the first of approximately 40 static hot-fire tests. This will be the next phase of UVR's evolution and development.



HYAK-3

Hyak-3 is UVR third Hyak-class rocket that is designed to reach 30,000ft above ground level, and will reach a speed of approximately Mach 2 (2469.6 km/h). Its name comes from the Chinook jargon word meaning “fast” or “swift”. It will feature redesigned components such as an improved air frame, avionics, and recovery system.



Launch:	June 2020 at Spaceport America, New Mexico, USA
Payload:	Atmospheric sampling system, flight data recorder, and yeast sample for Phillips Brewing & Malting Co.
Target Altitude:	30,000ft. AGL
Propulsion system:	Solid Fuel, Commercial-off-the-shelf (COTS)
Recovery System:	Drogue and main parachutes with 2-stage deployment mechanism.

SPECIAL ACKNOWLEDGEMENTS

The UVic Rocketry Team would like to recognize our support crew; our current sponsors, the team members, the members of other UVic Clubs, and everyone else who makes what we do possible.

“ **To make meaningful developments in the field of rocketry, win, inspire, and ultimately cross the Karman Line.** ”

– Team Mission Statement

We would also like to give a special thank you to Dr. Chris Nelson for advocating and providing assistance to our payload subsystem, and Dr. Afzal Suleman for his funding and advocating for our team. In addition, we would also like to thank our design and machining advisor, Rodney Katz, for his contribution to our team's success.



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