

# Not your ordinary after-school project

Motivating the next generation through interdisciplinary design challenges

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ICAO/UNOOSA Aerospace Symposium  
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# Mixed Messages

The challenges of inspiring youth

The aerospace industry is seen as intimidating for many youth, only accessible by exceptional individuals

We place emphasis on entry into the industry, and not on providing the tools to drive it

# As seen on Amazon

Student Developed Autonomous Aircraft



Pusher-style AC with electric powerhouse

30 minute endurance

Multi-camera payload with 2 DOF gimbaling, 30 fps downlink

Image geolocation and stitching on ground



Auto take-off/landing, waypoint navigation

Beginning work towards collision detection and avoidance routines

# Fundamentals of Rocket Science

Sounding rocket development for high-school student payloads

N<sub>2</sub>O-Paraffin/Al hybrid engine

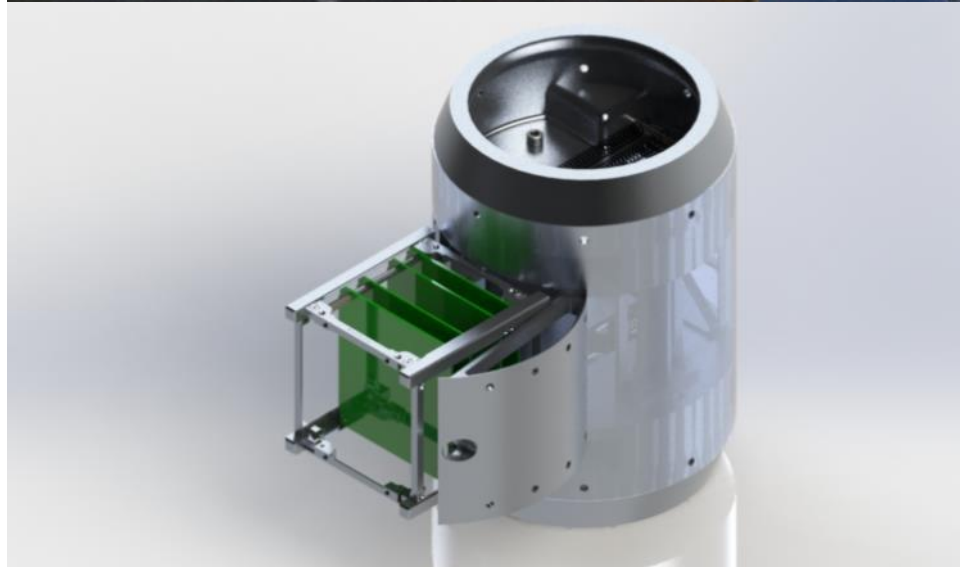
12 kN-s total impulse

Swirl-stabilized oxidizer injector

Regen-cooled nozzle

10,000ft apogee

1U CubeSat deployment



# Space is Accessible

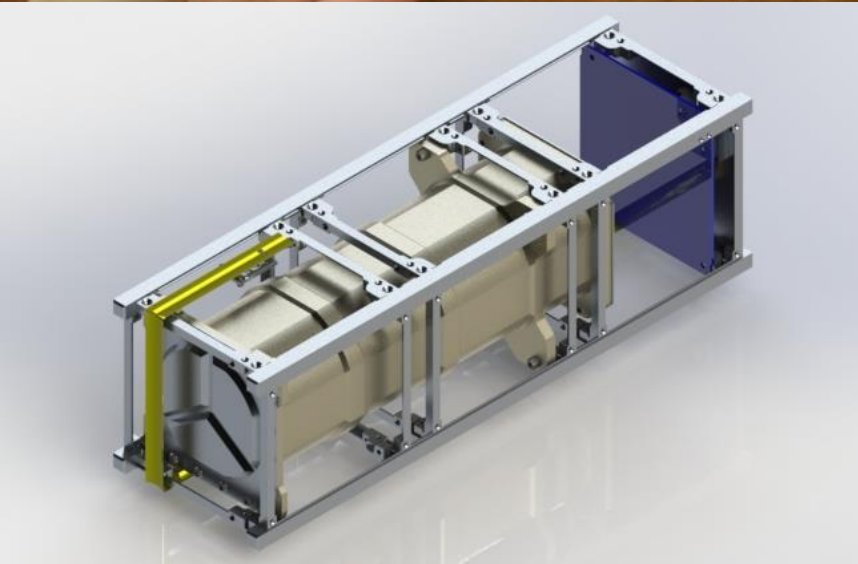
Space life sciences research on a small satellite



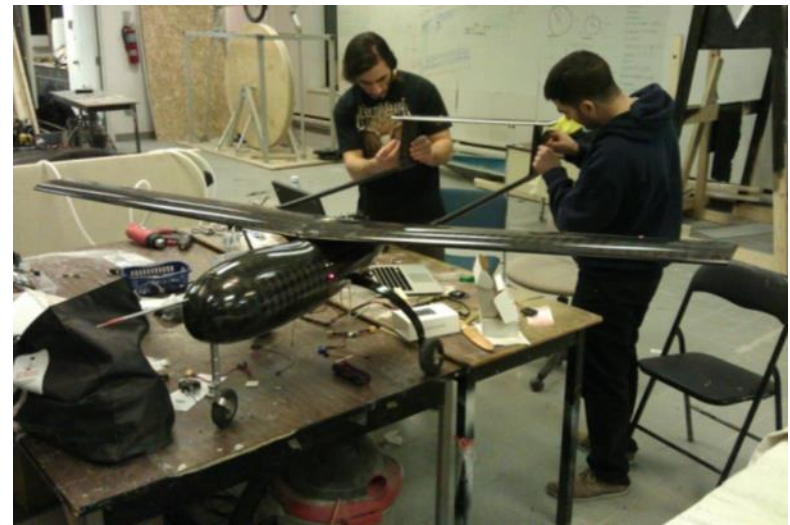
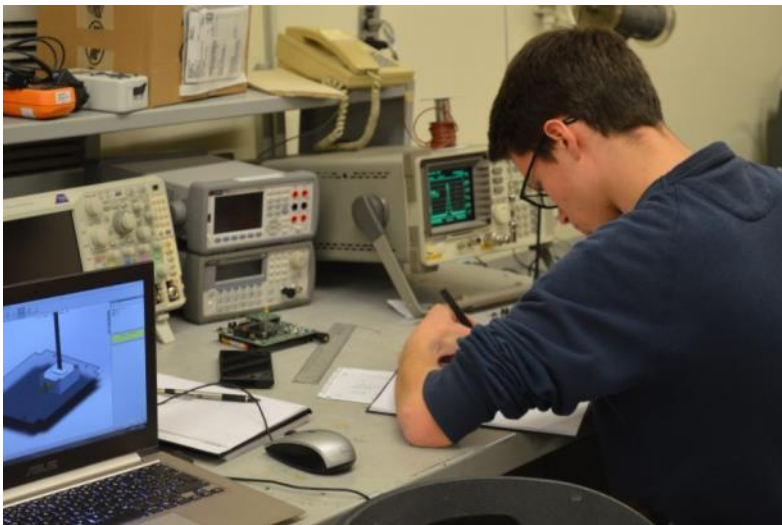
3U CubeSat platform

ISS Deployment late 2017

Examining pathogenicity/drug resistance of commensal microorganisms



# The Takeaway



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Thanks for your attention!

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