



NASA Flight Opportunities

Planning Successful Tests on Suborbital Rocket-Powered Vehicles

Ryan Dibley, Flight Opportunities Campaign Manager
H. Todd Smith, Ph.D., Johns Hopkins University Applied Physics Laboratory

Community of Practice Webinar Series – August 4, 2021

Session will start at 10 a.m. PT – Please mute your microphone and turn off your camera

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National Aeronautics and Space Administration



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Welcome to the Community of Practice Webinar Series!

First, a bit of housekeeping...

- Please mute your microphone and turn off your camera
- Today's session will be recorded
- Recordings for this and all future session will be posted on the Flight Opportunities website
- Please engage!
 - Use the chat throughout the session to ask questions

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Flight Opportunities Mission

The Flight Opportunities program facilitates **rapid demonstration** of promising technologies for space exploration, discovery, and the expansion of space commerce through **suborbital testing with industry flight providers.**



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Upcoming Opportunity - NASA TechRise Student Challenge

- For teams of sixth to 12th-grade students to design, build, and launch experiments on suborbital rockets and balloon flights during the upcoming 2021/2022 school year
- Entries open **August 18**
- Join the educator workshop on **August 11 from 12-4 pm EDT**
- More info: <https://www.futureengineers.org/nasatechrise>



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Join us for future Community of Practice webinars!

Advancing Small Spacecraft Technologies With Suborbital Flight Tests

- ❖ Anh Nguyen, PACE Project Manager, NASA Ames
- ❖ Paul De León, Flight Opportunities Campaign Manager
- ❖ Mary Palmer, Raven Aerostar


 Sept. 1 at 10 a.m. PDT

Future webinars


- Webinars are held 1st Wednesday of each month at 10 a.m. PT
- Topics will be announced in the Flight Opportunities newsletter and website
- Session recordings will be posted on the Flight Opportunities website
- Let us know session topics you would like to see covered

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Today's Speakers



H. Todd Smith, Ph.D.
Senior Space Physicist
Johns Hopkins University Applied
Physics Laboratory



Ryan Dibley
Campaign Manager
Flight Opportunities

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Johns Hopkins Applied Physics Laboratory (JANUS Program)

- Key commercial suborbital novel capabilities for APL
 - 1-2 orders of magnitude cheaper than traditional costs
 - Crewed(*) & un-crewed, relatively large payload capacity
 - Fully reusable with rapid turn around
 - Access to ~>100 km
 - Guaranteed safe return of payload
- Key potential applications (essentially raising laboratory environment to ~80-100 km)
 - Aeronomy, atmospheric, ionospheric *in situ* research
 - Flight test prototypes, engineering models and even actual flight models
 - Instrument development/technology demonstration
 - Early career development: opportunity for end to end (lower risk) project exposure in relatively short period of time
- Initial focus - integration platform to facilitate low cost, rapid applications (JANUS)
 - Provides spacecraft interface, control & processing, data storage, power, environment monitoring
 - Removes the requirement to build an entirely new payload for every flight



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JHU APL Program Status

- Getting involved early -> gain experience & help establish emerging field
- 8 successful missions (interface establishment, environment monitoring/characterization)
 - Masten Space Systems (Xombie): 2 Nov. 2016
 - Blue Origin (New Shepard): 5 Oct. 2016; 12 Dec. 2017; 18 Jul; 23 Jan. 2019; 13 Oct. 2020
 - Virgin Galactic (Spaceship 2): 22 Feb. 2019; 22 May 2021
- Additional missions funded by the NASA Flight Opportunities Program
 - Establishing external payload accommodation on the Blue Origin New Shepard
 - Charged particle/remote sensing observations, and chipsat deployment



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Thank you!

Flight Opportunities website:

<http://nasa.gov/flightopportunities>

Contact us:

NASA-FlightOpportunities@mail.nasa.gov



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