



# Flight Opportunities

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## Greetings from Flight Opportunities

In this issue:

- An update from our home offices to yours
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- Infusion Spotlight: PlanetVac from Honeybee Robotics
- Recap: Our panels at NSRC 2020

Enjoy!

The Flight Opportunities team

## An Update

### From Our Home Offices to Yours

As many of you have moved your daily work to your homes, our team is also continuing the day-to-day operations for Flight Opportunities from home offices in Alabama, Arizona, California, Mississippi, New York, Pennsylvania, Virginia and Washington.

“We’ve always been a geographically distributed team, accustomed to collaborating using NASA’s IT infrastructure to keep us connected,” said Program Manager John Kelly.

Our team is currently preparing for incoming abstracts and proposals from industry, academia, and non-profit research institutions for flight testing on commercial suborbital vehicles through [NASA’s Tech Flights solicitation](#). (See information below.) In the coming months, we will select promising technologies with the potential to help NASA achieve its mission goals.

“In addition to the upcoming Tech Flights selections, we’re also continuing to work with NASA technologists across multiple centers to identify opportunities to fly their technologies,” said Chief Technologist Stephan Ord. “And we’re also supporting principal investigators whose technologies have already been selected for future flights to prepare for those tests and maintain close coordination with our [commercial flight providers](#).”



Program Manager John Kelly works from his home office in Tucson, Arizona. Credit: Kathleen Kelly



Chief Technologist Stephan Ord works from his home office in Mountain View, California. Credit: Christopher Ord

## Reminder: Tech Flights Mandatory Abstracts Due April 17

Mandatory abstracts for [NASA's Tech Flights solicitation](#) are due one week from today:  
**April 17 at 5 p.m. EDT**

Full proposals are due May 22 at 5 p.m. EDT.

Interested proposers must [register with NSPIRES](#) before your abstract can be submitted. NSPIRES is also where your abstract and all other proposal materials must be submitted online.

**Be sure to monitor the [online FAQ](#), which we will continue to update with relevant questions as we receive them.**

### What To Include In Your Abstract

The abstract is meant to be brief. It should not exceed 4,000 characters in total and should include:

- The full title of your anticipated proposal
- A brief description of the proposed effort including a technology description (not to exceed 3,000 characters)
- Name of the proposal lead/principal investigator
- Names of any co-investigators and/or collaborators

### How To Submit Your Abstract

Your abstract should be completed and submitted using the Notice of Intent (NOI) option in NSPIRES:

1. [Log into NSPIRES](#)
2. Navigate to the [Tech Flights solicitation page](#)
3. Click on the “Create” button next to the Mandatory Abstracts due date
4. Follow the prompts to complete the requested NSPIRES cover page information and provide the abstract information listed above as the proposal summary. Attachments will not be accepted.

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## Upcoming Deadlines for Other NASA Solicitations

Other solicitations from NASA's Space Technology Mission Directorate (STMD) have imminent deadlines in the coming weeks. Please take note of these dates if you are planning a submission or awaiting invitation to submit a final proposal.

**[Small Business Innovation Research \(SBIR\) & Small Business Technology Transfer \(STTR\)](#)  
Phase I Proposals deadline extended: April 20, 2020**

### [Tipping Point](#)

**Invitations for Final Proposal Submissions (target): May 18, 2020**  
**Final Proposals Due: July 20, 2020**

### [Announcement of Collaboration Opportunity \(ACO\)](#)

**Invitations for Final Proposal Submissions (target): May 11, 2020**  
**Final Proposals Due: June 25, 2020**

## NASA Seeks Input on Biological and Physical Sciences Research Priorities Via Decadal Study

It's a once-in-a-decade opportunity: the chance to identify the most compelling science and technology questions facing the decade ahead. This year, the National Academies of Science, Engineering and Medicine (NASEM) will be announcing a solicitation for white papers for the second Decadal Survey in the areas of Biological and Physical Sciences in Space. For more information, [read the full NASA web feature](#).

## Spotlight

### Tech Transition Spotlight: PlanetVac from Honeybee Robotics

#### The Technology:

PlanetVac is a pneumatic device that attaches to the leg of a lander vehicle and enables fast, simple, and reliable collection of regolith for analysis. The technology addresses one of the most difficult and important tasks for planetary exploration: collection of surface samples on the Moon, planets, asteroids, and other celestial bodies.



*PlanetVac is shown attached to the leg of Masten's Xodiac vehicle. Credit: Honeybee Robotics*



*PlanetVac uses suction to lift regolith into a canister for separation and storage. Credit: Honeybee Robotics*

#### The Flight Tests:

PlanetVac was tested on Masten's Xodiac vehicle in a 2018 simulated lunar landing in the Mojave Desert. The technology performed as planned, successfully collecting more than 300 grams of simulated regolith.

#### The Transition:

Honeybee's technology was selected in 2019 as a payload on a lander being developed under NASA's Commercial Lunar Payload Services contracts. It has also been infused into the Japan Aerospace Exploration Agency (JAXA) Martian Moons Exploration (MMX) mission, where it will capture regolith from the surface of Phobos.

Part of the way we measure our success is by keeping track of your success. Has your technology achieved a transition success due to your work with Flight Opportunities?

Examples include:

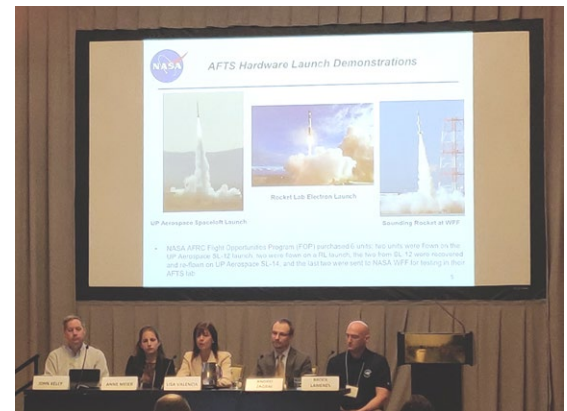
- Infusion in a NASA or other government agency mission
- Selection for further orbital demonstrations
- Selection for research with other organizations
- License to industry

Get in touch to let us know.

## Events

### Looking Back on NSRC 2020

In early March, several representatives from Flight Opportunities attended the **Next-Generation Suborbital Researchers Conference (NSRC)** in Broomfield, Colorado. We enjoyed meeting with many of you there. Program Manager John Kelly led a panel that featured several technologists whose flight tests with Flight Opportunities have enabled significant technology transitions: **Anne Meier** from NASA's Kennedy Space Center (KSC), **Brock LaMer** from Montana State University, **Lisa Valencia** from KSC, and **Andrei Zagrai** from New Mexico Institute of Mining and Technology. We are thankful to these colleagues for the time and effort they put into making the panel a success, and we hope the information they shared about their experiences with suborbital flight testing were useful to you.



In addition, **SPLICE** Principal Investigator John Carson led a panel with a wealth of information about NASA's work to develop and identify precision landing technologies for Moon and Mars exploration missions, including **Artemis**. Special thanks to panelists **Behçet Açıkmış** from University of Washington, **Jeff Herath** from NASA's Langley Research Center, **Andrew Horchler** from Astrobotic, and **Courtney Mario** from Draper.



(Top) Our panels at NSRC covered a variety of technology transitions and infusions, along with suborbital flight best practices and information about precision landing advances. (Above) We were glad to meet with many members of the Flight Opportunities community at our booth. Credit: NASA

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Drop us a line at:

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**NASA Flight Opportunities Program**

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Flight Opportunities is part of NASA's Space Technology Mission Directorate.