

## Overview of NASA's Commercial Suborbital Research Program

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by *Doug Messier*

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Students perform an experiment in microgravity aboard the Airbus A300 Zero-G plane.

Bruce Pitman, a contractor working at NASA Ames, gave an update on efforts to use suborbital space tourism vehicle for scientific experiments on Friday at the ISDC conference.

The program was started by former NASA Associate Administrator Alan Stern to study how the research community could make use of commercial suborbital tourism vehicles. The basic problems the research community faces are: high cost and a lack of flight opportunities. Current options for microgravity flights:

- drop towers
- sounding rockets
- high altitude balloons

- parabolic flights
- suborbital

All of these options have limitations. For example, the typical parabolic flight has about 23 seconds of microgravity, Pitman said. However, commercial suborbital flights will have about four minutes of microgravity.

So, NASA put out a request for information last year to gauge the interest in the scientific community on using this enhanced capability. The response was highly enthusiastic, with many people saying “wow” over what the type of experiments they could conduct in four minutes, Pitman said.

“We were pleasantly surprised with the response we got, especially since no money was associated with this request,” he said.

Some of the areas that look promising for microgravity work include:

- basic science
- biotechnology
- human physiology
- astrobiology
- materials science
- observational science
- space technology development and testing/flight certification

Pitman said suborbital tourism vehicles will allow researchers to fly experiments and technologies multiple times, an option they don't have at the moment. This arrangement is also good for NASA, which can make use of services on a commercial basis without having to build and maintain it, he added.

Now, all that remains is for suborbital tourism vehicles to actually fly.