

BioServe puts butterflies aboard shuttle to space station in educational mission

By [Ann Schrader](#)
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Putting bugs into space is nothing new for the scientists at BioServe Space Technologies in Boulder.

Over the past two decades, the NASA-funded center on the University of Colorado's Boulder campus has packed up and sent aloft hundreds of spiders, worms, fruit flies and lady bugs.

On Monday, larvae of monarch and painted lady butterflies were sent to the International Space Station aboard the space shuttle Atlantis. Thousands of U.S. schoolchildren will monitor their development.

BioServe has designed, built and flown 50 life-science payloads on 35 spaceflights to such out-of-the-world places as the International Space Station and the Russian space station Mir.

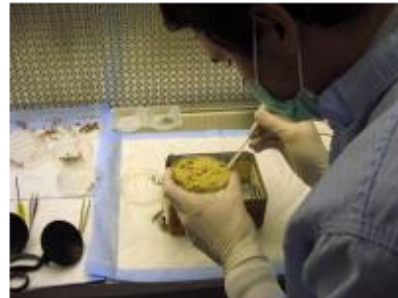
Most of the payloads have gone into space aboard the space shuttles. With only five missions left until the shuttles are retired next year, BioServe is working on how to offer a space-based research platform.

The butterfly payload is designed to inspire America's kindergarten through 12th-grade students in science, technology, engineering and math.

Students will be able to watch how the butterflies develop in the weightless environment of space, said Stefanie Countryman, BioServe's payload mission manager.

While this mission is educational, most of BioServe's payloads have been conducted in partnership with more than 100 industrial partners.

BioServe's mission is to assist researchers in conducting experiments in microgravity by providing the hardware and know-how. The goal is to develop commercial products.



CU graduate student Ryan Horn, a mission manager for the butterfly experiments, loads a habitat with larvae for the shuttle launch Monday. (Photo courtesy of BioServe Space Technology)

"One of our most recent ones was with Amgen," Countryman said of the California-based company that has facilities in Boulder and Longmont. "We have worked with them in the areas of bone loss and muscle atrophy."

BioServe also is working with Astrogenetix, a subsidiary of Austin-based Astrotech Corp. Astrogenetix has an experiment on the current shuttle mission that is using microgravity in its search for a therapeutic agent or vaccine against staph and salmonella bacteria.

BioServe has about seven full-time people in its hardware group and seven in its software group. The center supports several undergraduate and graduate students.

With the space shuttles retiring and the next-generation space vehicle, Orion, not ready until at least 2015, BioServe has been in talks with other launch organizations.

"We plan to continue to launch," Countryman said. "We do not have all of our agreements completed, but we will be working on those over the next year."

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