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UNL engineering students experiment with NASA in Microgravity U.

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University of Nebraska-Lincoln

Lincoln, Neb., March 22nd, 2011 —



UNL's Microgravity Team

A team of University of Nebraska-Lincoln engineering students will travel to Houston's Johnson Space Center to conduct research for NASA that will have them floating on-board reduced gravity missions, March 31 through April 9.

The team was chosen in December to participate in NASA's 2011 Microgravity University. According to NASA, the program engages selected college and university teams in scientific research that helps the U.S. space program to refine its efforts. Projects are prepared by students with mentoring from NASA and industry representatives, and then conducted during Flight

Week aboard a series of parabolic reduced-gravity flights in specially-equipped NASA aircraft that reach 35,000 feet above Earth.

Nebraska is one of nine teams at Microgravity University this year. NASA assigned the UNL team with building a full-scale replica of a propellant (fuel) tank with a flexible membrane, also known as a bladder, to separate gas and liquid phases of that fluid, and help stabilize its sloshing in the tank.

"Our experiment investigates the correlation between ground testing in 1-G and testing aboard the Zero-G aircraft in 0-G and 2-G environments," said Nebraska microgravity team leader Eldon Summerson, a senior from North Platte. "Conclusions we can draw from our data will be used to validate theoretical models of fluid sloshing behavior in microgravity conditions."

The team built a fluid chamber structure to protect the contents from random vibrations and disturbances of the test airplane, Summerson said, and made sure the structure can be safely secured to the aircraft.

All nine of the UNL team members study in the Department of Mechanical Engineering. The team's adviser, assistant professor Carl Nelson, worked with earlier UNL Microgravity University teams.

"In Houston, our students get in-depth tours of NASA facilities and meet people who shape the U.S. space program," Nelson said. "Each team must also pass a rigorous Flight Readiness Review panel. Through this entire experience, UNL students gain unique perspective for their careers, and through this project especially, they know they are contributing to greater efficiency and advancement of space exploration."

In addition to Summerson, UNL's 2011 microgravity team includes Jake Reher, a junior from Omaha; Chase Blazek, a sophomore from Bellevue; Joan Yule, a junior from Bloomfield; Eric Fritz, a sophomore from Atkinson; Bethany Drain, a sophomore from Elkhorn; Jake Lewis, a senior from Las Vegas, Nev.; Lena Butterfield, a senior from Omaha; and Devin Bertsch, a senior from Omaha.

For more information about UNL Engineering's experiences with NASA's Microgravity University, visit <http://microgravity.unl.edu>.

The photo on this page is of the members of UNL's microgravity team. Left-to-right: Assistant Professor Carl Nelson, team adviser; Jake Reher, junior, Omaha; Chase Blazek, sophomore, Bellevue; Joan Yule, junior, Bloomfield; Eric Fritz, sophomore, Atkinson; Bethany Drain, sophomore, Elkhorn; Jake Lewis, senior, Las Vegas, Nev.; Lena Butterfield, senior, Omaha; Eldon Summerson, senior, North Platte; Devin Bertsch, senior, Omaha.

WRITER: [Carole Wilbeck](#), Communications Specialist, Engineering, (402) 472-0451