

Paducah engineering students to run tests at NASA

Nine students will conduct their experiments on a zero-gravity plane at Houston's Johnson Space Center.

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A crew of nine students from University of Kentucky's Paducah Engineering Campus will travel to the Johnson Space Center in Houston this summer to perform experiments on one of NASA's zero-gravity planes.

"You can't buy a ticket on this plane," engineering professor Jack Leifer said. "This is a really exciting opportunity for the students. And it's a chance for NASA to expose the public to the sort of research it does and entice talented students to work there later."

Leifer's mechanical engineering students are designing a system to measure the impact of colliding space objects such as satellites or discarded shuttle "space junk." The students will be able to test the system in a weightless environment through NASA's Reduced Gravity Student Flight Opportunity Program.

A Zero-Gravity KC-135 plane, also known as the "Vomit Comet," will take the students from a starting altitude of around 25,000 feet to 40,000 feet in 30 seconds, then back down to 25,000 feet in 30 seconds, Leifer said. The students will experience "free floating" during the down cycles and feel as if they weighed twice as much when travelling up, pinning them to the floor.

"The cabin is padded, so no one will be injured," Leifer added. "And there is a flight crew of about 10 people to ensure the students' safety."

Their experiment involves measuring the impact forces versus acceleration on a cylindrical satellite model through a series of vibration tests. The plane will complete the cycle 30 times to allow the students time to complete their experiment. The students will publish a technical manual with their conclusions.

"We were a little hesitant at first because this is such a big project," said student flight leader Richard Tracy, a senior from Calvert City. "This is a lot of work. But now that we've seen what we're going to do, we can't wait to be called."

The crew will spend two weeks at the Texas center training for a two-day flight schedule sometime in July or August. Four of the students will fly, a different pair each day, while



BARKLEY THIELEMAN/The Sun--Flight crew: PCC engineering students participating in a NASA project are (from left) Chris Tempus, John Michael McWaters, adviser Jack Leifer, Alicia Crainshaw, Jeni Dowell, team leader Richard Tracy, Corey Pace and Tracy Hodder.

the rest serve as a ground crew. The "fliers" were chosen for their contribution to the project as well as seniority.

Paducah junior John Michael McWaters said he's a little nervous about the flight but looking forward to the sensation of floating. He hasn't really done anything to prepare for the ordeal — no dieting, no extra exercise.

"Maybe after the finals," he said. "Right now, I'm eating whatever I can to stay alive and awake."

Thirty-three of the 50 college groups that applied to the program were accepted, including students from Brown University, Purdue University and the Massachusetts Institute of Technology. The University of Kentucky has sponsored flight opportunity groups over the past five years through the Kentucky Space Grant Consortium. Leifer said the UK administration thought it would be a good opportunity for the Paducah students.

"This is a chance for us to distinguish ourselves as a UK campus," La Center senior Corey Pace said. Pace, another flight leader, helped write the project proposal and is getting course credit for participating through an independent study program.

"We may be at (Paducah Community College), but we're a UK program and this will show people some of the great things the school has to offer ... I've only flown once, so I'm excited. I just hope I don't throw up."

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