STUDENTS FLY HIGH OVER

Spring Break

by Kim Hulsey

Some students may spend Spring Break partying at the beach, but for others, a high-flying good time takes on an entirely new meaning. More than 200 university students traded in a trip to the beach for a ride aboard the KC-135 aircraft this spring.

The Reduced Gravity Student Flight Opportunities Program, sponsored by Johnson Space Center, provides a unique experience for undergraduate students to propose, design, fabricate, fly and evaluate a reduced gravity experiment of their choice aboard the KC-135. Inside the aircraft, also known as the "Weightless Wonder," weightlessness is achieved by performing a series of parabolas, each of which gives passengers nearly 30 seconds of reduced gravity.

University Affairs Officer Donn Sickorez said that the program aims to motivate college students majoring in science, technology or engineering as well as to introduce these subjects to students who may not have considered them.

Each student team is made up of four undergraduate student flyers with an unlimited number of people providing support on the ground. The team must go through a rigorous application process to participate and finally fly their experiment in the weightless environment. As part of the application process, the students must submit a letter of intent and a proposal that outlines the technical specifications, safety evaluation, outreach plan and administrative requirements of the experiment. After the experiment is selected, it must pass a Test Readiness Review before being flown. Finally, after flying, the students are required to submit a final report of the project.

"It's one thing to design an experiment in the classroom, but it is completely different trying to operate it and have it produce valid data in a weightless environment," said Jackie Jaron, a junior in astronautical engineering at Purdue University. "This was one of my most rewarding experiences."

Jaron and her Purdue teammates flew an experiment to test the effects of weightlessness on nanophase materials, and they were just one of more than 70 teams that participated this year.

"Not counting any flights this year, we have flown 1,211 students from 103 different schools in 44 U.S. states," Sickorez said. "That's not bad for six years."

For more information on the program, contact Sickorez at donn.g.sickorez1@jsc.nasa.gov.

PHOTOS CLOCKWISE FROM TOP

A University of Minnesota student smiles from the KC-135 cockpit.
jsc2003e26089 Photo by Bill Stafford

Students get some preflight safety training from Randell Woodard, Aerospace Physiology Technician.
jsc2003e24485 Photo by James Blair

A University of Texas student enjoys his free-floating time on the Weightless Wonder.
jsc2003e27714 Photo by Bill Stafford

Two Purdue University students demonstrate their weightless gymnastic skills.
jsc2003e27758 Photo by Crystal Schroeder

An Auburn University student shows off her new microgravity skills for John Yaniec, Lead Test Director for the KC-135.
jsc2003e28478 Photo by Bill Stafford

AN Out-of-Classroom EXPERIENCE

JSC education program gives community college students real world exposure

by Kim Hulsey

Each year, almost 300 community college students and 30 professors have the opportunity to learn outside of their classroom walls with the Community College Aerospace Scholars (CAS) Program. Participants experience the excitement and reality of an engineering career while interacting with NASA engineers and scientists during a two-day visit to JSC. The program involves a team project directed by NASA employees, a tour of JSC facilities and interaction with other students from across the state.

"The goal of CAS is to encourage scholars to pursue their four-year degrees and careers in one of the STEM (science, technology, engineering and mathematics) areas," said CAS Program Manager Linda Smith. "We want to provide the opportunity for students to make informed choices."

Prior to arriving at JSC, the students are assigned to six fictional companies and meet each other for the first time upon arrival. The scholars must select their project engineer and system managers, communicate effectively, attend meetings, meet deadlines, work the budget and present information – all to compete for a proposal request to build a Mars Autonomous Roving Survey Utility Vehicle.

Javier Garcia, a professor at Texas Southmost College, said that students in the program "learn the importance of teamwork with NASA."

"It's like it is in real life," said Claudia Taylor, a student at San Jacinto College South.

J.B. Groves, a professor at Wharton County Junior College, shared similar thoughts about CAS. "I think it's a great program," he said. This is the second year that Groves and Garcia have participated in the program.

While the program is designed for students, Smith noted that the volunteers have responded enthusiastically as well. "I believe many of them enjoyed the event as much as the scholars did," she said. Each team is paired with a JSC employee who serves as the "CEO" of the team's fictional company.

Philip Beebe, a Senior Software Engineer in Safety and Mission Assurance, participated in the program as a CEO. Beebe looks forward to one day working with the CAS students he has mentored.

"I have met students in the Texas Aerospace Scholars Program that I continue a regular correspondence with," he said. "They are making their way to becoming scientists and engineers and possibly joining us here at NASA. For me, this is the greatest benefit."

"CAS empowered its participants, students and teachers alike, with an awareness that simply cannot be learned in a classroom or, in many cases, on the job," said student Neil Jouvenat. "It was intense and often stressful. It was hard work. Above all, though, it was exciting, insightful and incredibly rewarding, even though our team took last place."

"The response of the scholars and colleges has been phenomenal. They responded that they were challenged and inspired by the event," said Smith.

Future plans are being made to expand the program into the fall semester as well. Currently, there are three sessions from late March to early April. JSC is also looking into partnering with other states and NASA centers to create equivalent programs across the nation.

PHOTOS CLOCKWISE FROM TOP

The green team participates in the rover competition. During the competition, each team's rover has 16 minutes to retrieve 'rocks' from around the course and bring them back to home base.
jsc2003e27026

The Community College Aerospace Scholars tour the historic Apollo Mission Operations Control Room.
jsc2003e27078

The red team tests its rover before the competition.
jsc2003e27244

The green team tests its rover's abilities on an incline. The teams could not see the competition courses beforehand and had to prepare for as many contingencies as possible, just as NASA engineers plan for a variety of scenarios.
jsc2003e27233

The red team meets to work out details. Teams had to funnel all questions and concerns through their Project Engineers, who served as liaisons to the JSC employees participating in the event.
jsc2003e27242

All photos this page by David DeHoyos and Crystal Schroeder

25th Annual JSC-FOD

Chili Cook-off

A quarter century cooking chili 1979-2003

SPACE CENTER
Roundup

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