

Out of this world: Parade of Mars rovers unveiled at UH competition

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Third annual event attracts future scientists, yields innovative designs

Young scientists and engineers fired up their model cars for a journey to a distant planet during the 2005 Mars Rover Model Competition at the University of Houston.

More than 260 primary and middle school students from 23 schools in the Houston area displayed their models, judged in the categories of free form, radio control and solar power. Houston's First Lady, Andrea White, presented a total of 30 awards.

The entries were subject to scrutiny by top minds in the fields of academics and space exploration, with 140 volunteer judges from the UH College of Education, NASA-Johnson Space Center, the Houston Section and UH Student Chapter of the American Institute of Aeronautics and Astronautics, the UH College of Natural Sciences and Mathematics Ambassadors and the Memorial High School Robotics Team.

"We have a shortage of American children entering college who intend to major in science or engineering," said Edgar Bering, professor of physics and electrical and computer engineering at UH. "This presents a major long-term threat to the future of the American economy. The challenge for educators is convincing elementary school students that science and engineering are exciting, relevant and accessible career paths. Events like this help, offering hands-on projects that provide very true-to-life results that encourage children to take learning beyond the

textbook."

With current aerospace engineering and science professionals beginning to age, combined with low youth interest in these fields, the talent pool is waning and the next generation of professionals is in jeopardy. In an effort to alleviate the future shortage of aspiring scientists and engineers, the Mars Rover Model Competition aims to enhance space science, planetary exploration and robotics teaching to children in grades three through eight.

"Events such as the Mars Rover Model Competition are very important to the future of science," said Karen Staley, a sixth- and seventh-grade science teacher at Fort Settlement Middle School in Fort Bend Independent School District. "In a world where information is just a keystroke away, young people can become overwhelmed by the possibilities. These events bring out the need to dream and believe in various possibilities."

Staley also hosts her own Mars rover competition every fall, extending her lab hours so that students may use it to work on their projects.

Among notable winners at this year's competition, Jeffrey Pacht, a repeat winner from Fort Settlement Middle School, took first place for his AT-ME solar power model. His unique rover could both roll and walk. Equipped with four legs, it also could function with three in the event one was damaged under the harsh Mars environmental conditions, Staley said.

"Jeffrey Pacht's model is the product of one young man's ingenuity and commitment to quality and accuracy," Staley said. "He considered the importance of providing a detailed plan to those judging the model, he had confidence in his work and he wasn't afraid to compliment or help others out at the competition. These qualities put Jeffrey and his project

ahead of the others."

The competition with other rover teams and learning from one another are critical aspects that provide for an exciting, enthusiastic experience in the Mars rover program and hopefully foster an optimistic attitude toward science and engineering fields, Bering said.

"A lot of students at this age feel limited by their age, but this competition allows them to go beyond those limits and, most importantly, allows them to realize that their dreams can become a part of our future in science and technology," Staley said.

In constructing the mobile robots to explore Mars' surface, the program involves a curriculum unit and a contest. In the curriculum portion, students conduct research on Mars to determine the means of operation and structure for their unique rover and then illustrate their plan in a written report. Students must become experts on the planet and understand the elements to design a vehicle sufficient to explore the surface. In the process, the young scholars learn to work in teams, communicate, navigate the Web, effectively use books and periodicals and get information firsthand from engineers and scientists in the field.

Students construct the models as part of a six-week classroom or homework project on Mars. A minimal cost (less than \$25) for materials – mostly found objects and simple art supplies – is permitted for the models. Teams must enact a five-minute skit presentation for judges at the competition.

In addition to Pacht and other winners from Fort Settlement Middle School, awards also went to students from Windsong Intermediate, Colony Meadows Elementary, Westwood Elementary, Mark Marek Elementary, Manvel Junior High, Woodlands Christian Academy, Bales Intermediate, Post Oak Montessori School, Southside Elementary, the

Science Magnet Program in Seabrook, Humble Middle School, St. Catherine's Montessori and St. Francis Episcopal Day School. A full listing of winners can be found at marsrover.phys.uh.edu/MarsRover.

Source: University of Houston

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