

Employees judge student exhibits during annual Science Fair

It's time again for the Science Fair. The Science Fair is the traditional way students in our community (and across America) are able to integrate what they have learned in school with observations about how the world works.

The exhibits demonstrate both the "old school" sciences of biology, physics, and math and the "newer" consumer and Earth sciences. Students use the scientific method to develop a hypothesis, create an experiment, test their hypotheses, record results and report on what they have learned. Sometimes the findings and presentations are just as interesting as the means they choose to prove or disprove their hypothesis.

Science Fair judges for intermediate and grade schools used to be provided by the area's high school science teachers. Because of budget cuts and increased class sizes, the area high schools are no longer able to support the science fairs in the lower grade levels. So the schools turned to the Johnson Space Center's scientific and administrative community.

For the last several years, JSC civil service and contractor employees have been judging science fairs at many local elementary, intermediate and high schools. Judges come from all disciplines across the center. Engineering, medical sciences, legal, ISO 9000, and many other offices sent representatives to help our local schools and students.

The volunteers who served as judges were organized and coordinated by Robin Hart, who works for InDyne, Inc. in the Public Affairs Office.

"The Education Outreach Program greatly appreciates the efforts of the volunteers who participate in the Science Fair judging activities," said Hart. "The volunteers' support results in a wonderful and exciting experience for each of the students involved."

Hundreds of students worked on their individual projects, which are separated by grade level and grouped into several broad categories for judging purposes. The schools and students work hard to show off their best efforts. Judges evaluate the student's work in the categories of Scientific

Method, Methodology, Creativity and Presentation. Points are assessed, the findings discussed among the judges, and then points are

tallied to determine the winners in each category. The judging effort lets the students know that the JSC community cares about their efforts.

The exhibits also tell the judges a little bit about what makes the students dream and grow. The quality and effort put into the exhibits show more than just the student's knowledge of the subject. Some exhibits show an intense interest in a particular hobby or theme. They also express the student's interest in putting together their best work over just getting the job done.

The students all demonstrated their abilities, skills, hidden talents, hobbies and interests. From rockets to robots, volcanoes to voltmeters, M&Ms to Mobius strips, the exhibits were all interesting.

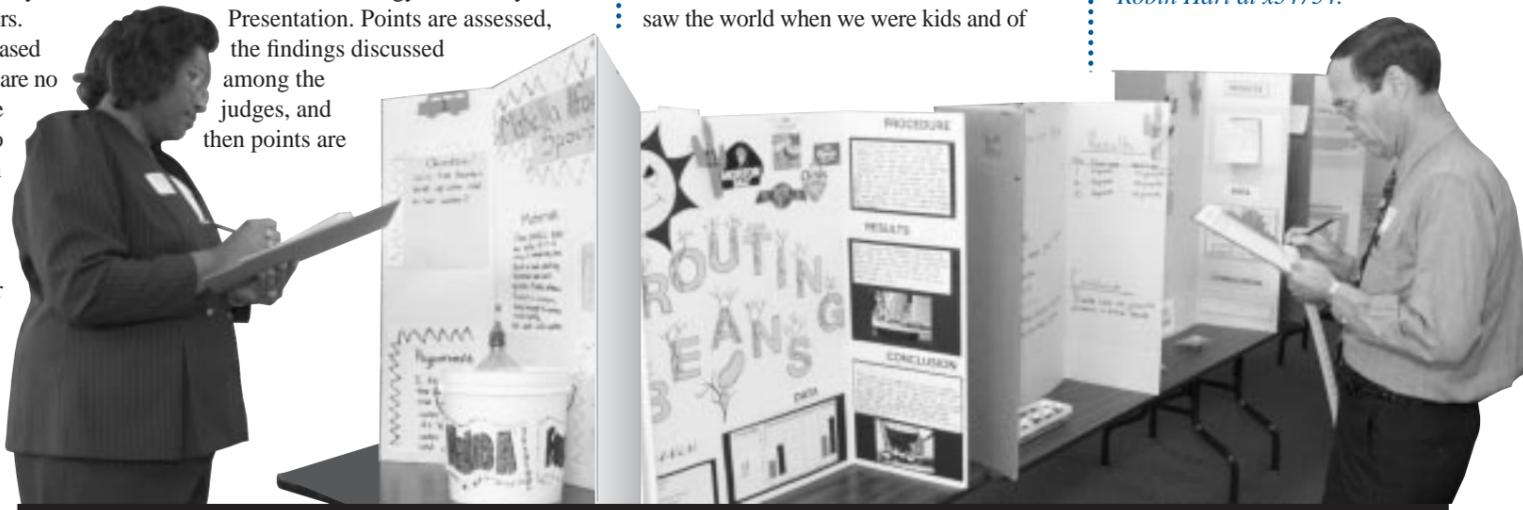
The Science Fair reminds us of how we saw the world when we were kids and of

what we did with our own dreams and visions. It also teaches us what the engineers, scientists and visionaries of tomorrow are thinking about today.

According to Hart, there are several volunteer opportunities available for future educational outreach events.

"There are still many requests for judges that we are looking for participants to fulfill, as well as requests for career shadowing hosts, career day speakers, and guest presenters," said Hart. "The Education Outreach Program relies on the support and dedication of JSC's employees, and we are always hoping to expand our program to include new participants." ■

For more information on the Education Outreach Program, contact Robin Hart at x34754.



NASA JSC Photo JSC2000E01427 by James Blair

NASA-JSC Photo JSC2000E01428 by James Blair

JSC's Sharyl Butler, aerospace engineer, and Charles Gott, chief, Simulation and Graphics Branch of the Automation and Robotics Division, take notes while judging student exhibits at the McWhirter Elementary School Science Fair.

The Argonauts are coming!!!

Education team prepares for JASON XI

For months, hundreds of teachers have been visiting JSC getting a crash course in everything from physics to mock space walks. They've been preparing for JASON XI "Going to Extremes," this year's version of the annual JASON Project that soon will have more than 5,000 students inundating JSC to watch space scientists and deep sea divers via distance viewing technology.

Behind the scenes, orchestrating this immense project year after year, is a small team of individuals who themselves have JASON down to a science. Angelo Casaburri, Oklahoma State University, aerospace education specialist; Delicia Slaughter, IMPASS, education outreach coordinator; and Lori Wheaton, OSU, administrative assistant, are part of that team and make up the powerhouse behind the teacher training component of JASON. The team spends countless hours each year, including many Saturdays, coordinating with teachers, researchers

and JASON Project reps around the country to bring science to life.

"Preparation for JASON is quite challenging," said Casaburri. "But the feedback from teacher participants who return each year is the best reward."

Wheaton agrees but says, "On the other hand, to see the students' expressions when something unexpected happens during the live broadcast, whether it's dinosaur ants, spiny lobster katydid or a tarantula crawling up a student's arm, is equally gratifying."

JASON Project is an 11-year-old education endeavor started by Dr. Robert Ballard, the scientist who discovered the *Titanic* wreck. Every year, the project shares exotic scientific adventures with a growing following of schoolchildren and teachers around the world. This year, the JASON Project concentrates on the comparisons of exploration in a deep sea environment with that of deep space. Students have been studying various

exploration and science concepts in support of this theme all year. The highlight will be the JASON interactive event next month when students will watch, some in person, as divers with the National Oceanic and Atmospheric Association and NASA shuttle flight crewmembers share their experiences in exploration.

"Space is not always covered in textbooks, so teachers are yearning for all the information they can get," said Slaughter.

To help ensure that teachers have all the tools they need to prepare the students, the JASON Project develops detailed curricula for each year's theme. The teachers are provided with a plethora of study guides, lesson plans and activity sheets. They also are encouraged to participate in teacher training workshops.

JSC is one of the 36 primary interactive network sites for the teacher training and just wrapped up the last of 14 sessions this January. More than 450 teachers from as

far as Brownsville participated in the daylong training seminars.

"Since teachers in the state of Texas are mandated to have at least 30 hours of professional development training each year, a lot of teachers choose JASON teacher training year after year because they are so interested in the diverse topics," added Slaughter.

With the teacher training behind them, at least for JASON XI, the team is now preparing for the pinnacle of the JASON Project – the interactive event – which takes place Feb. 28 - Mar. 10 in Teague Auditorium. Organizers anticipate a record attendance for the broadcast shows, which will run five times a day, 60 minutes each.

JSC employees may notice lots of production and video teams infiltrating the center late February as they arrive to prepare for JASON XI. ■

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Station Program passes major readiness milestone

test, Cockrell said from inside the laboratory, "This has been a tremendous test, and it gives me greater confidence that lab activation will go well for us on orbit."

"The purpose of the mission sequence test was to demonstrate that the actual timeline could be executed with the crew on board and the flight controllers in the control centers," added Mark Kirasich, a member of the Flight Director Office who participated in the tests. "The test was a resounding success."

The Z1 segment containing control moment gyros and critical communications

equipment will be launched during STS-92 (3A), followed into orbit by the P6 solar array and power segment on STS-97 (4A). These two flights will be followed with the STS-98 (5A) launch of *Destiny*. Following this set of testing on the ground, these three station elements will be separated to begin their individual launch processing for flight and will not see each other again until they reach orbit.

The launch of the U.S. laboratory module will bring to life new systems capability in environmental control, attitude control, flight computers/software, high-rate communications, and thermal

control to the station. Ten enhanced computers will be launched in the U.S. laboratory module to the station, inclusive of three command and control computers, which take over control of the station from the software in computers on board *Unity*. The laboratory also will bring two guidance, navigation and control computers that control the operations and attitude control of the control moment gyros. They also provide pointing data for the solar arrays and high gain antennas. High data rate S-band is added with the launch of the laboratory that will bring air-to-ground communications capability

between the ISS and the MCC in Houston. Additionally, internal water thermal control systems in the laboratory will be connected to interface with the external ammonia thermal control systems on the P6 segment.

These two significant tests proved the ability to process video from the ISS, communicate over the new voice systems, and provide attitude control, life support, high data rate telemetry, active thermal control, and more.

"Launch day of these elements just became a lot closer to us all," said Kelso. "We can't wait till they get there." ■