JSC and CCISD celebrate SciAd kickoff

By Nicole Cloutier

JSC and CCISD have begun phase one of the Science Advisor (SciAd) Program and due to an overwhelming response to Center Director George Abbey's call for volunteers, have already expanded the program. More than 100 JSC employees signed up to be SciAds, causing organizers to add all eight CCISD intermediate schools to the program.

"Initially, we only planned to have SciAds at the 18 CCISD elementary schools the first year," said Susan Braymer, SciAd Steering Committee chair and deputy director of Human Resources. "But due to the wonderful response from JSC employees, we were able to expand the scope of the SciAd Program and provide assistance to more schools."

Eight intermediate schools and all 18 elementary schools are now participating in the SciAd Program. Organizers plan to incorporate all four CCISD high schools next year and include several other school districts in the area. "We also are hoping to involve the contractor community in the next phase of the program," said Braymer.

To kick off the program with CCISD, SciAd recently hosted a team building session for the SciAds to meet their respective teacher liaisons, known as STARS. After an introduction from Abbey and CCISD Superintendent John Wilson, the STARS and SciAds paired up for a hands-on activity and then were able to peruse educational resource exhibits.

Although the program provides a lot of flexibility for the STARS and SciAds, one of their first objectives will be preparing for an upcoming LEGO® Robotics Competition. Each elementary school is developing a student team to participate in the early December competition. The SciAds will be a big asset to the teachers in helping the teams prepare.

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> – John Wilson

"Having a degree in elementary education is a lot different than building robots," said Dee Rozenburg, a fourth grade teacher from McWhirter Elementary School, who said she was very excited to hear that JSC staff would be helping them with the robotics project.

"Helping the teachers with hands-on projects and demonstrations will be a large part of our role," said Winston Goodrich, SciAd and aerospace engineer in the Engineering Directorate. Goodrich said in his many years with NASA he's participated in numerous other volunteer calls such as science fair judging or talking to classes, but he feels this program will be different. "I think having the continuity for the teachers and the students is the key to this program. Most of us have done these types of things before on a smaller or shorter scale, maybe a once a year visit, but nothing that entailed this kind of commitment. I'm really looking forward to it."

School administrators are enthusiastic as well and anticipate positive results for the students.

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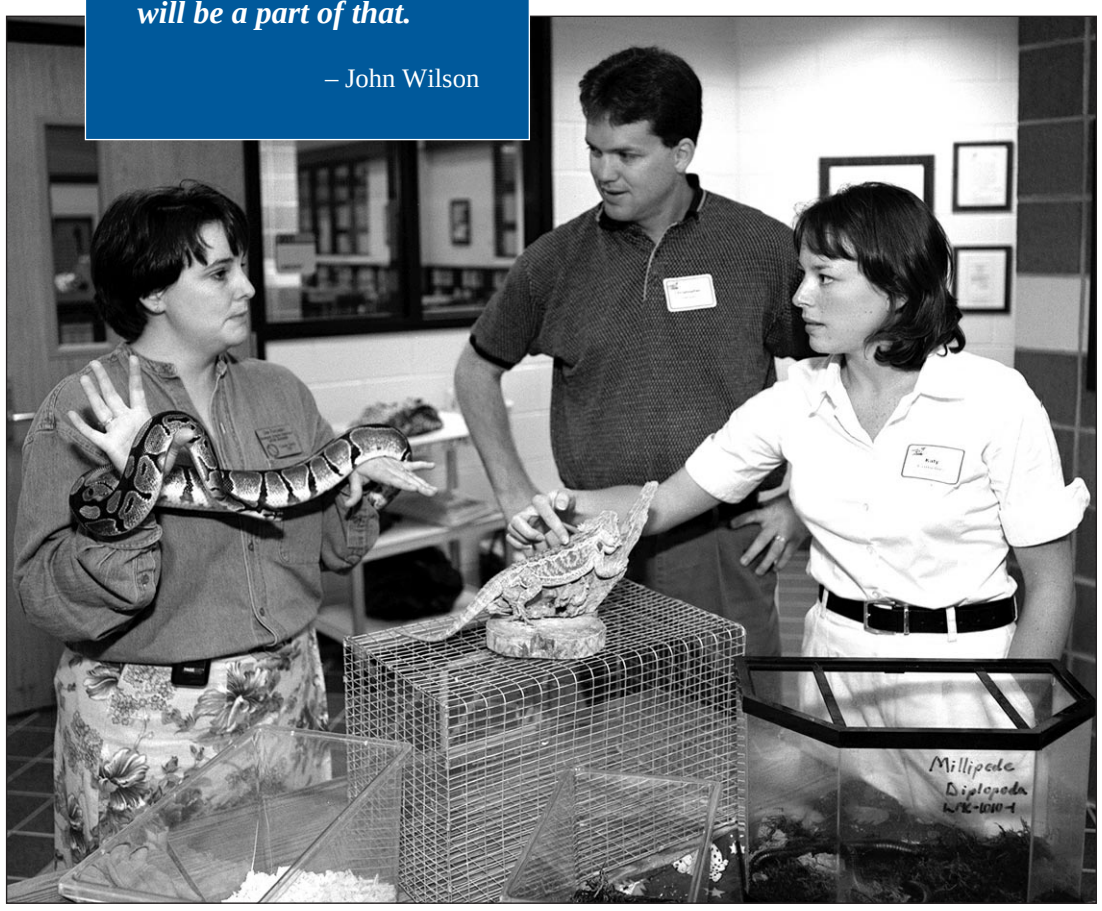
The SciAd Program, which was launched by the White Sands Test Facility in 1990, provides JSC employees as resources to the local schools. Each SciAd can dedicate eight hours a month, of paid time, to the program. The SciAds are available to the school's teachers to help in a variety of capacities – including helping the teachers plan hands-on activities, lab equipment setup or coming to the class to help with a demonstration or experiment. More information is available at: http://hro.jsc.nasa.gov/sciad/. ■



NASA JSC Photo S99-13278 by James Blair

Deb Pavlosky from the Seabrook Science Resource Center shows SciAds "live" resources for hands-on science projects.

Co-ops design robots for use in classrooms

When NASA-JSC and the Clear Creek Independent School District kicked off the new Science Advisor (SciAd) Program October 18 at Space Center Intermediate School, three LEGO® robots stole the show. The machines were designed, built and programmed by three teams of JSC co-ops.

"Last August, it was determined that the Clear Creek Independent School District science program for the academic year 1999-2000 would include a LEGO® robotic competition at all CCISD elementary schools," said Rick Barton, NASA chief of the Aeroscience Branch and lead of the SciAd Resources Team, which is responsible for developing hands-on technical activity kits for the SciAds to use in their classroom demonstrations. "The issue for the Resources Team was to determine how to train all the JSC SciAds on how to use LEGO® materials."

The idea was to enlist the enthusiasm and innovation of the co-ops to build and program LEGO® robots, which would subsequently be used by the teachers and SciAds to prepare the students for their upcoming competition.

To initiate the plan, three teams of co-ops participated in a competition of their own, using commercially available kits to build their robots. They were able to build whatever they wanted, the only rule being that they could not purchase additional LEGO® parts.

Team 1 built a LEGO® machine that senses inclines. The team felt that if the robot were exploring unfamiliar terrain such as Mars, it might encounter inclines. As a result of such an encounter, it might flip over. As it was programmed, the robot senses the potentially dangerous incline, stops and backs up, turns, and approaches the same incline again from a different angle. In addition, a pressure sensitive shovel on the front end of the machine can be used to move debris out of its way.

Team 2 built a robot that may be usable on Mars. The team devised a robot, called the Mars Smart Grabber, which looks for items and, upon finding them, decides whether or not to pick them up. If it decides to do so, it picks them up and moves them to a certain area.

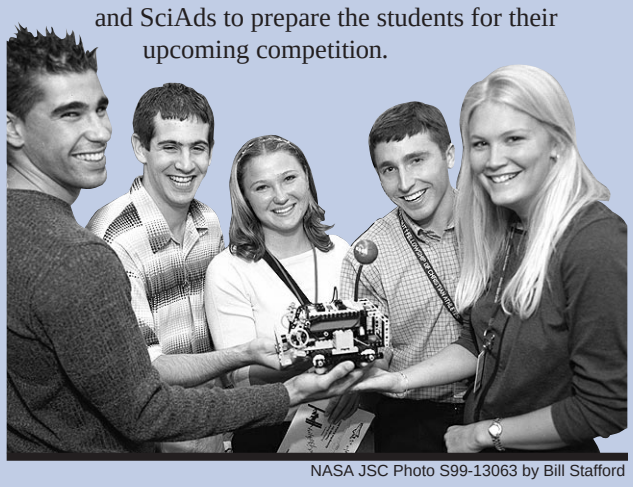
The robot moves around and stops when a touch sensor indicates that it has run in to something. A sensor then reads the reflection of light off of whatever object it is viewing. The lower the amount of light that is reflected, the greater the chance that the robot will grab the object. Two motors run the robot.

Team 3 produced a robot that winds its way through a maze by constantly turning right. If the robot runs in to a wall, a touch sensor under the front bumper tells it that an obstruction is ahead. One motor runs each of the machine's wheels. Once it reaches the end of the adjustable maze, the robot plays a victory song.

Team members received JSC GEM or "Go the Extra Mile" Awards for their support of the SciAd Program during a special ceremony held at the center.

"From the very beginning of this program, we have had wonderful support from the co-ops," said Susan Braymer, SciAd Steering Committee chair and deputy director of Human Resources, following the awards presentations. "On behalf of the center, I want to thank each of the co-ops for their help in making the SciAd Program so successful."

A cooperative effort between JSC and CCISD, the SciAd Program links volunteers and educators for the improvement of science education. ■

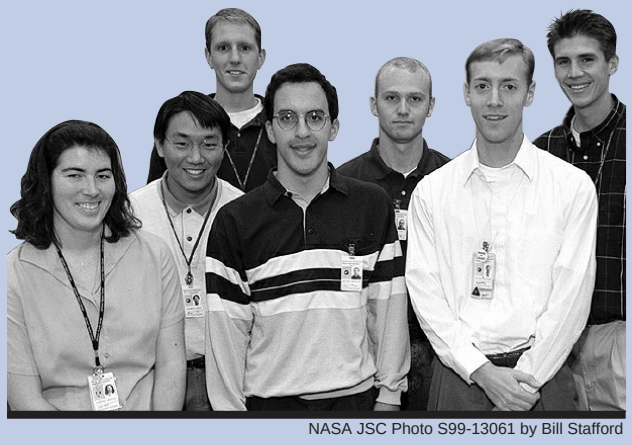


NASA JSC Photo S99-13063 by Bill Stafford

TEAM 1 MEMBERS, from left, are: Javier Goas, Josh Krakos, Jessica Badger, Aaron Brunner and Lucie Johannes. Not pictured: Jeffrey Davis.

NASA JSC Photo S99-13062 by Bill Stafford

TEAM 2 MEMBERS, from left, are: Olivier Deigni, Tiffany Richardson, Kay Standridge, Phil Strawser, Alisa Hawkins, Marcia Holman and Rey Guerra.



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TEAM 3 MEMBERS, from left, are: Jen Sheppard, George Tuan, Jon Lenius, Adam Milstein, Ben Hargis, Matt McCurdy, and Todd Nadeau.