A day of math, engineering and science

More than 500 students compete against peers

By TARMO HANNULA

SANTA CRUZ — The annual Math, Engineering and Science Achievement preliminary competition unfolded at UC Santa Cruz Saturday.

More than 500 educationally disadvantaged middle and high school students from partner schools in Santa Cruz, Watsonville, Salinas, Gonzales, Castroville and Salford convened at the Jack Shakti School of Engineering to compete against their peers in a variety of science, technology, engineering and mathematics projects, that tested their design, presentation, critical thinking, problem solving and teamwork skills.

Students got to show off home-engineered projects such as prosthetic arms designed to accurately toss a ball and move objects, or mousetrap cars designed to stop after an exact distance, balloons filled with helium and drop contraptions.

Antonio Hernandez, a ninth-grader from North Monterey County High, earned high marks for his mousetrap car that utilized old LP records as wheels.

"I put the idea to use records from a middle school class I was in," Antonio said. "At first I thought I was going to lose, especially after my first try. But on my second chance I did really well.

Indeed, on his second attempt to have his invention stop on a strip of tape after rolling about 8 feet, the rickety mouse wheel slowly past the mark, stopped and then backed up and pushed nearly on target, triggering a racket of applause.

"I knew it was going to work."

Hernandez said.

This year's MESA Day competition featured new events, including video gaming and a prosthetic arm competition. In the video game design competition, which was held at an earlier date, a team of students from Alliance Middle School (Zuli Alarcón, Isaac Moreno and Joaquin Campos) won second place in California and will now move on to the national competition.

Santa Cruz High School student Samantha Gervasio (left) tests her skill at tossing a tennis ball with a prosthetic arm competition is part of the MESA competition at UC Santa Cruz, Watsonville, below: J.P. Chavez, a sixth-grader from Lakeview Middle School, tests his balloon-based airplane.

Comet Pan-STARRS on parade in western sky

By TARMO HANNULA

WATSONVILLE — The comet Pan-STARRS is putting on a show in the early evening sky for the rest of this month. Traveling inside the orbit of Mercury, the bright comet can be seen in the western sky with the naked eye.

According to Earthsky.org, "the comet should be visible, and it is bright because it is passing closest to the sun — at close to our sun's innermost orbit of about 38 million miles away. Comets are typically brightest and most active around the time they are closest to the sun when solar heating vaporizes ice and dust from the comet's outer crust. Expect the comet to brighten quickly around this time. Look for it low in the west after sunset. It is binoculars to help you spot it in the twilight sky."

Dates of special interest include tonight and Wednesday when Pan-STARRS comes closest to the crescent moon. The tight conjunction tonight will offer sunset photographers a dramatic photo op. Observers should look low and west.

Officials say the best viewing time in our area is about 30 minutes after sunset. The comet sets about 7:10 p.m.

This photo, made available by spaceweather.com shows the comet Pan-STARRS seen from Queenstown, New Zealand.

By TODD GUILD

WATSONVILLE — The Pajaro Valley School District Board of Trustees Wednesday will hear a positive budget report, meaning that the district is able to maintain a positive fund balance over the next three years.

But the news will come with a caveat, as the district's long-term health is still in issue.

That's because of $82 million that has been cut over the past five years, affecting classrooms, programs and services throughout the district.

Proposition 30, passed by voters in November, used a series of new taxes for education but only allowed for the state to further cut to education.

While it allowed the district to avoid a $7.6 million reduction, it did not allow for an increase in revenue.

Bill under the new law district officials must determine how the funds will be utilized.

The problem is further compounded by the uncertainty from Sacramento, where Gov. Jerry Brown has proposed a shift in the way schools are funded.

In his January 2013 budget proposal, Gov. Brown proposed a plan to fund all K-12 basic further education at the same level as the 2008-09 school year.

Avastee said.

The trustees have a report ahead on the long-term financial plan: the schools are set to be fully impervious to changes in Sacramento, where Gov. Jerry Brown has proposed a shift in the way schools are funded.

The report shows that the state's budget could force districts to reduce costs by $4.8 million.

The trustees expect to see a rise in the number of new academic programs and a decline in the number of students looking for a new academic program, as the state's budget is set to be fully impervious to changes in Sacramento, where Gov. Jerry Brown has proposed a shift in the way schools are funded.

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A model rocket launches skyward during one of several demonstrations during MESA Day.

MESA
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And thanks to funding provided by the Santa Cruz County Medical Society, Dr. Jack Watson, who is on the board of SCCMS, is a long-standing judge for the biology-related events at MESA Day.

"It was outrageous that students who wanted to attend MESA Day would not be able to because of a lack of funding," Leidiger said. "He suggested that MESA request funding from SCCMS to cover the costs of the additional students, which was granted. The competitions at MESA Day provide an opportunity for students to apply their knowledge in science and engineering in a hands-on, creative way that’s exciting and fun. It's also important for students to spend the day with scientists, engineers, and other experts in the field who act as role models."

Santa Cruz High School student Samantha Gervasto, grade 12, and her sister, Morgan, grade 11, worked to build a prosthetic arm.

"It took us many many many hours to build," Morgan said. "It was not easy. But it worked. We even tossed one of the tennis balls into the target bucket. That was amazing."

Her sister said throwing the ball with the device was "really difficult."

"You kind of have to use your whole body to throw the ball," Samantha said. "It took me a while to figure that out."

Jose Moreno, an assisting academic intern at UC Santa Cruz who now works with middle school students, said his education in engineering stemmed directly from his experience with the MESA program when he was in middle school.

"Even when my inventions failed or messed up, I came away from it a better student because I was still learning," Moreno said. "It made me want to get in there and do better. By the time you’ve gone through four years of MESA events you’ve really learned a lot. MESA gave me the opportunity to learn about college as well, because you feel welcome and you’re invited to get to know what a university is like."

In the “speed easy” competition students randomly chose one official topic that they had to deliver a short, focused, impromptu oral presentation on. For the “model human brain” event students constructed original displays and models of a bisected human brain and addressed questions drawn from an assigned list using reading material provided in the MESA Day curriculum.

Matteo Rocha Ruiz, executive director of the Educational Partnership Center, said she was "very encouraged" by the turnout of the event.

“Those students are here to learn and have a good time,” she said. "It’s a great environment for them to use math and science in a fun way."

Undersandjing the group of students cenerating the model helicopter, antonio Hernandez of North Monterey County High School launches his mousetrap car.

JAIL
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Inmates they were visiting, will face conspiracy charges and will be shipped to the significantly more restrictive Main Jail, Johnson said. The women will also be barred from future jail visits, while Aburas will not be able to take part in programs offered to low-risk inmates such as substance abuse counseling, anger management and GED classes.

Aburas was in the Rountree facility on drug sales and possession charges. The women were described as family members.

"(Being housed at the Rountree facility) is an opportunity for them to change their lives, and we’re not going to put up with this," Johnson said. "We’re zero tolerance for any sort of contraband coming in. It poses a danger not only to the inmates, but to the deputies as well."