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Students stretch minds for NASA

By Beth Reese Cravey County Line staff writer

When Orange Park Christian Academy teacher Kevin Simmons said he could see student Emily Piatt as a theoretical astrophysicist, she laughed. What a big title for a 16-year-old to wrap her mind around.



Now, after immersing herself in a Simmons-sponsored science project that students hope will one day ride on a NASA space shuttle, and having visited with scientists at Kennedy Space Center this month, Emily is not laughing anymore. Maybe such a career is in her future, she said.

"It was fun. They were so super-enthusiastic about their work. So happy and hyper," she said. "It was really cool. I have been thinking about that a lot."

Last year, Simmons tapped six of his 'best students to design, test and build a bio-reactor to develop a bone-mass " experiment to conduct on the ground and, hopefully, on a future shuttle. The experiment would measure the effects of zero gravity, or weightlessness, on cells that make bones.

The project was designed to expose the students to the whole gamut of the research world, including cell biology, engineering, marketing and writing grant proposals, helping prepare them for college and the business world. Also, the work might lead them to consider potential careers in science and engineering, Simmons said.

"These students have awesome opportunities to stretch their minds and dreams," he said.

Simmons formed a non-profit foundation, independent of the school, paving the way for tax-deductible financial donations from individuals and corporations. He named the foundation Tekna-Theos, using words from the Greek New Testament that, combined, mean "Children of God."

The initial group of students, including Emily's sister, Claire, who has since graduated, got things rolling last year. This year, some of the same students and a new influx are taking the project further.

On Aug. 14, 10 students went to Kennedy Space Center and met with Jaydeep Mukherjee, administrator for the Florida Space Grant Consortium; Samuel Durrance, executive director of the Florida Space Research Institute, as well as an astronaut who has made two shuttle flights; and John Brandenburg, a plasma physicist. The institute and the consortium work with the National Aeronautics and Space Administration and support space related research in Florida.

The students hoped to seek consortium grant funding for the project.

"They found it very intriguing, especially considering we were going for a grant no other high school had ever gotten," Emily said. "They were very encouraging about it" Mukherjee confirmed he was impressed with Simmons and his students and intended to round up some fellow space researchers to visit the academy. But he said he could make no funding commitments.

The consortium's grant program has an education component, but it has funded only University projects so far and is competitive, he said. Still, the Tekna-Theos group's bio-reactor idea "is a good project," he said. "It is not earth-shattering, but it is something that could give them exposure."

Also, their work could make them role models among other high school students, he said.

Since the Kennedy Space Center visit, the students have gotten back to the job at hand researching the materials they will need for the bioreactor, getting cost estimates and looking for more grant sources. Also, they are preparing a web site on their project. The encouragement they have received from Simmons and Mukherjee and his colleagues and the possibility that something they created might one day be a research tool in space keeps them going. "It's just mind-boggling," Emily said.