

# Launch an opportunity to teach students about science

**T**hink back. Do you remember anything really frustrating about middle school? I do. There was no science in my school. By seventh grade it was clear to me, science was interesting. I could not get enough. Astronomy, chemistry, earth science and geography were, and still are, my favorites.

We did not have any laboratories at Saint Aidan's Catholic School for girls. We wore uniforms, celebrated St. Patrick's Day, and smoked occasionally. Ah, seventh grade. Anyway, even smoking made me curious. I tried to figure out why cigarettes stayed lit no matter what the weather. What was it about cigarettes that accelerated the fire? I knew drawing on the cigarette was different than what accelerated the fire while the cigarette stayed in the ash tray.

So back to seventh grade, I loved science. I drew a car that could navigate to its destina-



**PAT  
HYNES**

SPACE GRANT CONSORTIUM

tion. I drew another car that could fly, and that was pre-Jetson's — lots of people did that. But I never considered any of this worthy of discussion. I was a girl in the late '50s, and we did not talk about science. It was frustrating. And I am sure it explains my passion to provide access to space for all students. The sciences and engineering skills necessary to build experiments to go to space encompass so many different academic subjects. It's just right for

someone with curiosity.

I am now less frustrated, and more purposeful. I want students to get the chance to learn about space science now that we have Spaceport America. Here we have an opportunity in that we can send middle school experiments to space. And that's just what will happen on April 1. The date is not lost on me. Every experiment we fly will work. There will be no foolish experiments flying just because it's middle school.

I made that promise to myself and all the people who are working on this project with us. We will only fly experiments that will give students and teachers information, or in the science and engineering world — the all important "data." We are going to learn.

I will focus on one experiment, although 22 experiments will fly. Students from Central Elementary School in Artesia want to learn about Earnshaw's Theorem. Without going over-

board here, think about playing with magnets. Put four magnets in the shape of a square, a fifth magnet in the middle and start moving the middle magnet. The theorem predicts the magnetic behavior on earth will be different possibly than behavior during launch and re-entry. The students will use a type of magnetic material, pyrolytic graphite, and will see if microgravity changes the behavior of the magnets and graphite. The students will film the behavior and measure it against their predictions.

My organization, through funding from NASA, is paying for the cost of the launch. We also trained the teachers this summer, and we are buying the materials for all school experiments. You can go to our website, [www.launchnm.com](http://www.launchnm.com), to look at the entire list of experi-

ments from schools across New Mexico, El Paso and Tucson.

Let's talk about the cameras. They must film at a very fast rate, in low and uneven light conditions during the 25



Gs of launch, and microgravity of descent. Descent can take up to 15 minutes, during which time the experiments will experience microgravity, that floating you see astronauts do in space. It is during this period that students will see how the graphite behaves.

We encountered a problem with the camera batteries. It was determined that the battery life may not be long enough should we encounter any launch delays. Rats. We have six cameras filming experiments on the rocket. Our commitment, we will only fly experiments we know will give

students and teachers information. So, we replaced all six cameras.

People from Spaceport America, NMSU and volunteers including Jim Hayhoe, Bruce and Kathy Lewis, Bill Gutman, Wayne Savage, Gene Gant, folks at NASA White Sands Test Facility and White Sands Missile Range, and Judy McShannon on my staff, will make this a launch to remember. I will write more about this launch in my next article.

You are invited to join us on April 1. Busses leave at 3 a.m. from the Kmart parking lot on Highway 70 in Las Cruces. The cost is \$45 for the bus ride. For more information, call my office, (575) 646-6414.

*Pat Hynes works at New Mexico State University for NASA directing the New Mexico Space Grant Consortium. She can be reached at (575) 646-6414 or at [pahynes@nmsu.edu](mailto:pahynes@nmsu.edu)*