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SECTION B

# METRO AND STATE NEWS

## Down-to-earth imagination

Texas Science and Engineering Fair concludes today.

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If Alvaro Navarro and Raul Castrellon have their way, gardeners of the world will someday tell OPEC to get lost.

Lawnmowers won't run on outrageously priced gasoline that spews pollutants and degrades Earth's ozone layer. The usual Saturday morning lawn chore will be fueled by methane — a material as close as the nearest cow pasture.

Their idea for a manure-powered lawnmower propelled the El Paso high school sophomores into the finals of the ExxonMobil Texas Science and Engineering Fair this weekend in San Antonio.

It's one of hundreds of teenage brainstorms on display at the Convention Center.

Students from sixth through 12th grades devised experi-

ments to look at things as far-flung as the genome of E-coli bacteria, the effect of fish oil on breast tumors, and the strength of construction beams. Others are trying to invent solar-powered rockets and biodegradable plastics.

Judging began Friday, using professionals recruited largely from the San Antonio area — a bid to avoid the controversy that arose during regional finals, which were judged by teachers.

The event ends today with an awards ceremony.

Winners in 16 categories can get college scholarships, and three grand prize winners will be selected to compete at an international science fair next month in Phoenix.

Each project, it seems, began with an idea for making the world a better place.

"Gas prices are too high," Navarro said. "We decided we've got to do something about it."

Castrellon lives on a ranch, where bovine biomaterials are abundant. The teens collected some cow chips, mixed them

with water in a plastic milk jug and kept it in a kitchen oven to maintain the proper temperature of 29 degrees Celsius (about 84 Fahrenheit). Eventually they proved they could generate enough methane gas to inflate a balloon.

"I thought my mom was going to kill me when she opened the over," Navarro said, adding: "It really stunk."

The students hope to be back at the fair next year with their next project — a compressor that will turn the gas into liquid lawnmower fuel.

"We've got a lot of work to do," Castrellon said.

Many of the projects are multiyear efforts.

Pinaki Bose, one of last year's grand prize winners, is back at the finals with the latest installment in his years-long effort to find a more environmentally friendly plastic.

He spent the past year mixing plastic components with biodegradable materials like sawdust and talc to see if he can trigger a chemical reaction that will make the plastic degrade more quickly in the

nation's landfills.

Right now, though, the thing that is really degrading is his front yard, where the Fort Worth teen has installed a compost trench that he uses to meticulously test and measure the biodegradability of various organic compounds.

"I just hope I can convince my mom that I'm doing something good," he said. "I've got all manners of household waste buried out there."

Still, as altruistic and optimistic as the young inventors sound, they ultimately are grounded in practicality and reality, just like true scientists.

Kristen Whetstone, who did experiments with miniature solar-powered rockets, dreams of working for NASA and helping the space agency use solar technology to propel humans to Mars.

"I want to help design the first rocket to Mars," the Temple sophomore said. "Then, if it doesn't blow up the first time it goes up, I'll go on the second flight."

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