

Star-Telegram

FORT WORTH

October 25, 2004

Student 'wants to go beyond'

Youth takes plastics project to national science competition

By Cynthia L. Garza

Star-Telegram Staff
Writer

FORT WORTH - The idea for a science project struck Pinaki Bose at an aquarium while he was on vacation in Florida.

A trainer held up a plastic bottle during a show and said it would not biodegrade for at least 100 years. Then a dolphin came along and grabbed the bottle from the trainer's hand. It passed it on to a sea lion, which in turn flung it into a recycle bin.

"Unfortunately, many animals are not that clever, and many of them choke" on waste that ends up in their habitats, said Pinaki, 12, a student at Dunbar Middle School.

So a year ago, Pinaki went to work on a cheaper biodegradable alternative to conventional plastics. The project has won region and state awards, and it is now in a national competition.

Pinaki is in Washington, D.C., this week to take part in the 2004 Discovery Channel Young Scientist Challenge. He is one of 40 fifth- through eighth-graders from across the country -- five of them Texans -- vying for a \$15,000 scholarship. The winner will be named America's Top Young Scientist of the Year.

The high cost of biodegradable plastic keeps it from competing in the market, Pinaki said, so he set out to make a less expensive composite version, working after school and on weekends.

By mixing the polymer polycaprolactone -- a long-chain molecule that is difficult for microorganisms to digest, Pinaki said -- with regular sawdust from the

lumber store, he created a plastic that begins to degrade after two months' exposure to the environment.

Pinaki envisions using this new plastic to make biodegradable trash bags. It would decrease the waste in landfills by half, he said.



STAR-TELEGRAM/JEFFERY WASHINGTON
Pinaki Bose has created a plastic that begins to degrade after two months' exposure to the environment.

"I haven't quite worked out the economics yet, but I'm sure this will benefit many people," Pinaki said.

Explaining his research project in simple terms is tough, Pinaki acknowledges, but it's essential because that's one of the criteria used to judge the winner of the national

science contest.

"As far as polymers go, that's not something they discuss in middle school," said Leslie Johnson, Pinaki's Integrated Physics and Chemistry teacher. "I'm not really sure they discuss that in high school."

The class is for high school credit. Pinaki is interested in class discussions, but "he does ask questions that are a little ahead of what we're doing," Johnson said.

His mother, Prarthana Bose, agreed. "Yeah, he wants to go beyond," she said. "He reads *Popular Science* magazine. He doesn't want to just look at the stars, he wants to go beyond the stars."

IN THE KNOW

Science competition

The Discovery Channel Young Scientist Challenge finalists will present their individual projects and take part in a team-based challenge inspired by Einsteinian physics. Next year is the 100th anniversary of Albert Einstein's special theory of relativity. The team activities will air on the Discovery Channel on Dec. 19.