

Students shine at area science fairs

By Eileen FitzGerald
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In the aftermath of Hurricane Katrina, Alex Capecelatro learned, some diabetics were getting sick from using insulin that had not been kept cold.

As a diabetic, the 18-year-old Brewster High senior understood that insulin is normally refrigerated. He decided to find a way to keep the insulin cold without refrigeration.

He discovered the insulating product aerogel and spent about a year learning how to make it cheaper, quicker and more efficiently. In the process, he got to know a network of experts at MIT, UCLA, and NASA's jet propulsion laboratory.

The project "Nanoengineering Aerogel for Insulin Insulation" won him first prize at regional science fairs and second place at this month's Connecticut state fair last week and a spot at the International Science and Engineering Fair in Indiana in May.

"Aerogel is not common. Only NASA uses it in space shuttle applications, but it has the potential to serve a wider set of uses," said Capecelatro, who competed in the Connecticut fair because Brewster takes part in the Connecticut-based Science Horizons program.

Capecelatro said he worked on his project for about a year and a half.

"I came up with a new way to produce it cheaper, quicker and more efficiently," Capecelatro said.

Capecelatro called scientists who had conducted research into aerogel and visited their labs. He even landed a summer fellowship in one of the labs this summer.

"He's doing graduate-level chemistry in high school. It sets him apart," said his advanced placement chemistry teacher, Edward Schmidt. "You're dealing with a very unusual individual."

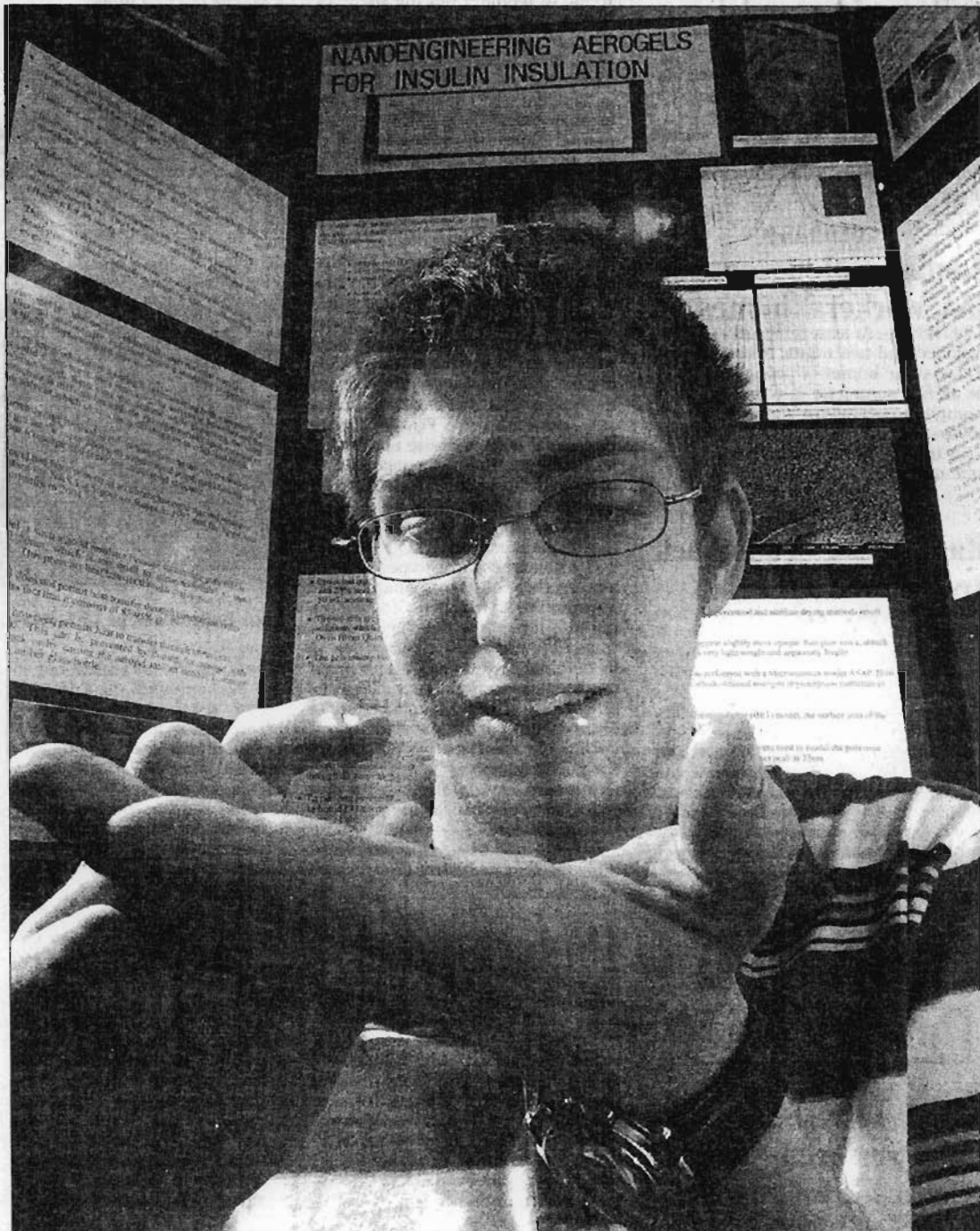
Newtown High School junior Andrew Taylor, the overall winner of the regional Science Horizons fair in Danbury, also earned a place at the international fair.

He studied the fish in salt marshes in Stratford and Stonington and found the fish in Stratford were shorter and lighter with a less efficient liver function. He concluded the industrialization of the Bridgeport harbor adversely affected the water quality.

Taylor, 16, said he was excited to go to the international fair and hoped to complete more research on his project before going. "Even if I don't win, this is a great experience to be with people from around the world with their amazing projects that were needed just to get there," Taylor said.

Other area winners included Brewster middle school student Matt Rizzotti, who won the eighth-grade physical science division with his study of "well location, depth and water hardness."

Ridgefield student Devi Lockwood won second place in the eighth-grade life science division for her project,



The News-Times/Carol Kalff

Alex Capecelatro holds a piece of homemade aerogel, a key element of his science project to keep insulin cold without refrigeration.

"Does the lunar cycle influence siblings?" New Fairfield student Claire Ingraham earned second place in the seventh-grade physical science division.

The Connecticut Science Fair, which is open to students in grades seven through 12, has two major divisions—life sciences and physical sciences. There are also special awards categories in applied technology, mathematics, computer science and the environment.

Richard Ingraham, the father of Claire and a scientist at the Boehringer Ingelheim pharmaceutical company, was the judging chair for life sciences at the Connecticut Science Fair. His three children participated in the regional Science Horizons competition.

He's seen that some schools are more supportive of students' efforts than others. The schools that support the students end up with the strongest

competitors, he said.

Ingraham mentioned students of teachers Tom Miller at Danbury High and Frank LaBanca at Newtown High as well as students in the science programs at Brewster High, Greenwich High and Staples High in Westport.

"For a lot of kids who like thinking about science and engineering, it's hard for them to get the appreciation that the sports kids get," Ingraham said.