Everything Jersey

Livingston students come for the robots, they stay for the science

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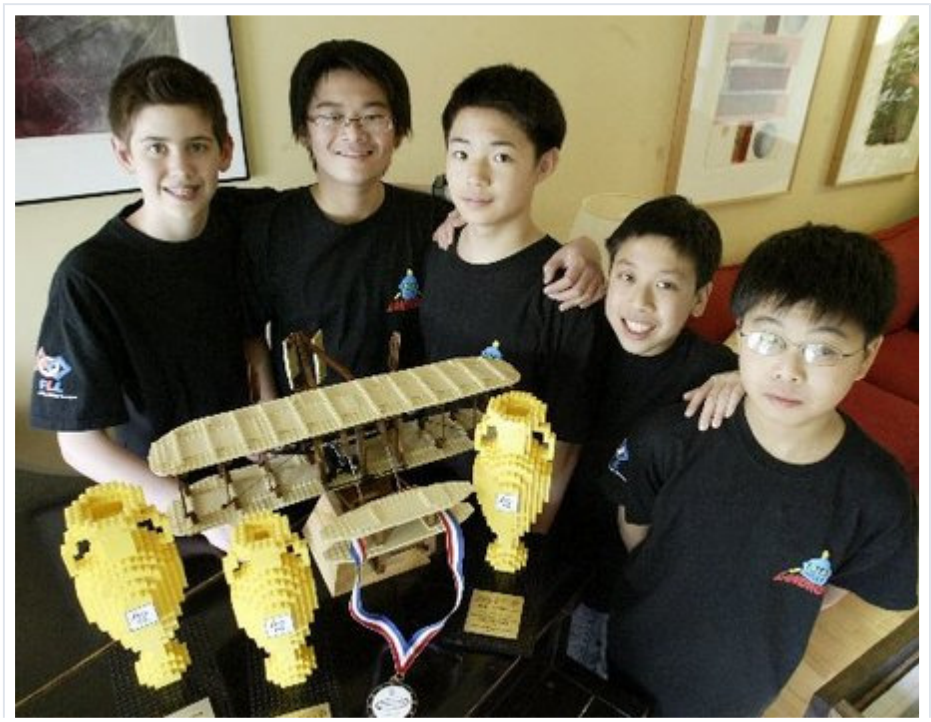
NO IMAGE **Tom Meagher**

LIVINGSTON -- A battery-powered motor, Legos and lots of ingenuity propelled five Livingston seventh-graders to Dayton, Ohio, earlier this month. At the FIRST Lego League championships, the boys and their autonomous, battery-powered machine went head to head with about 60 others teams from throughout the country.

After making a few last-minute adjustments to their robot, the quintet -- nicknamed the Landroids -- let the machine do its thing. The robot, called SERB, ran through four programmed sequences. Nimble and purposeful, SERB swept up tiny models of a bicycle and a laptop, raised a replica storm barrier and propped a "house" on stilts.



David Gard/New Jersey Local News Service

Livingston's Landroids--Gage Farestad, 13, Greg Vuong, 13, Jeff Dong, 12, Stanley Cheung, 13, and Karlin Yeh, 13--pose with their trophies from the FIRST Lego League championships in Ohio.

For both the participants and the audience, the championship's draw is undoubtedly the robot competition.

"This is the bait," said one of the Landroids' coaches, John Yeh, a computer engineer and the father of Karlin Yeh, the driving force behind the team's creation. "Robots are an excuse to get kids to do science."

But the most practical applications frequently come out of the competition's more cerebral component. At the national championship, it culminates in a five-minute presentation each team gives on a self-selected, real-world problem -- and its possible solutions. And it's there that the Landroids both excelled and impressed.

Having settled on beach protection and replenishment as their research subject for the competition, the quintet concluded with a stellar presentation. In Dayton, the five riffed on topics as seemingly disparate as recreation, eminent domain laws, pollution and taxes and condensed them into a coherent report.

"What they said was spot-on. When I heard that, I almost fell over. I work with engineers every day and they don't say it like that," said the Landroids' mentor, Army Corps coastal and hydraulic engineer, Roy C. Messaros, who holds a doctorate in ocean engineering. "Their synergy and teamwork is just scary."

The boys' efforts yielded an impressive, if yet untried and unproven, solution to replenishing the state's sandy coastline, where thousands of acres of beachfront are lost to a roiling Atlantic Ocean every year.

"We chose beach erosion since 60 percent of residents live by the coast, and because people love the beach," said Landroid Jeffrey Dong, the sole 12-year-old among the five friends, who also include Karlin Yeh, Stanley Cheung, Gregory Vuong and Gage Farestad, all 13.

They determined that an existing desalinization pump, slightly tweaked, could be used to propel offshore sand back onto the beach.

The quintet found that, if workable, their submersible, wave-powered pump would greatly reduce the pollution and cost associated with current beach-replenishment methods. Their ingenuity is such that their solution could well have real-world applications.

The Landroids left Dayton with several honors, including the competition's Champion's Award, considered among the Lego League's most prestigious, for excellent performance in a research project, robot design and teamwork.

The acclaim might not stop there. And neither, they said, will their focus on the competition's notions of teamwork and cooperation. "It's a competition of nice," Karlin said. "It's gracious professionalism."

With some robots thrown in for fun.