

# SCRAPPY COMPETITORS

East Palo Alto robotics team has brings engineering to local students. Page 3



SHAE HAMMOND – STAFF PHOTOGRAPHER

Cristina Becerra, 17, and Nathan Valencia, 16, get ready to shoot a ball from the Butter Duster, a robot they built with their teammates on the Churrobots, a group of East Palo Alto students competing in this year's Lego Robotics Competition.



## EAST PALO ALTO

# Kids create with spare parts, scrappy attitudes

School robotics team has brought engineering to local students for seven years

By Aldo Toledo

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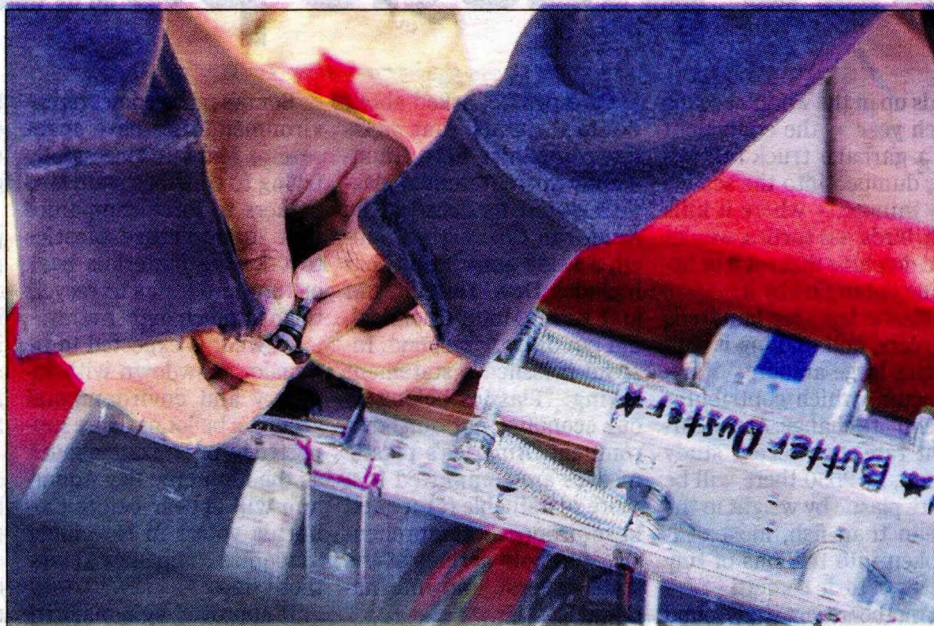
**EAST PALO ALTO** » In a small garage on Beech Street, saw-on-metal screeches bounce off the walls and spill out, interrupted only by the sounds of mechanical movements and the faint murmur of kids happily barking orders at each other while working on their collective pet project.

For the past three years, a dozen-or-so East Palo Alto middle- and high-schoolers have been experimenting with basic motors, electrical engineering, computer vision, hydraulics, machining, pneumatics and software development with one goal in mind: Build a robot.

Palo Alto High School senior Cristina Becerra, who is one of the longest-running members of East Palo Alto Robotics, said the team “just kind of happened.” She prefers to call the team the “Churrobots” (they hang tiny churros off of their robot honoring their largely Hispanic roots).

Without many options around her in East Palo Alto, she and a few dedicated people cobbled together enough parts and equipment from Home Depot and other local teams to forge it out of nothing.

In Silicon Valley, you’d be hard-pressed to find a school that doesn’t have a robotics program (all the techie parents have made sure of that) competing with the best of equip-



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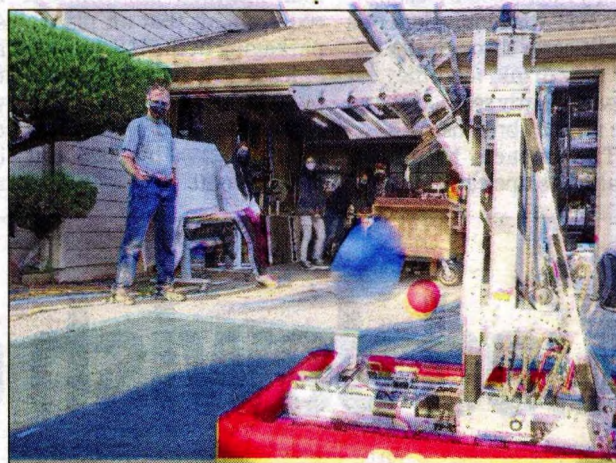
Nathan Valencia, 16, left, and Sophia Bai, 17, work on a robot in East Palo Alto on April 25.

ment and teams of talented young software and hardware engineers.

But in underserved East Palo Alto — which for decades has struggled with underfunded education, high poverty and the myriad issues that face its largely Hispanic immigrant community — dedicating the money and time to building a robot just isn’t as common and students are forced to visit Palo Alto or Mountain View in search of after-school programs that cater to their automaton interests.

Becerra said she first started building machines in fourth grade, using mainly Legos to build rudimentary robots.

“We bought a kit of parts to build a drive train and built with a bunch of Legos,” Becerra said. “I thought it was really fun, so I decided to try it out, and I ended up liking it. But then we aged out of it so we decided to make a team for high schoolers so the students who aged out could



Coach Greg Corsetto, of Mountain View, watches a robot shoot a ball using The Butter Duster, a mechanism that shoots balls to help defeat their opponents in competition, in East Palo Alto on April 25.

join and still continue robotics.”

The team’s challenges have grown since it’s junior high days, with frequent regional competitions serving as deadlines for building a robot able to stand a chance at the First Robotics Competition, an international high school robotics contest held every year since 1992. Each year, teams of high

school students, coaches and mentors work during a six-week period to build robots capable of competing in that year’s game. The robots must weigh no more than 125 pounds, and they’re judged based on changing standards every year. The robots must perform tasks like scoring balls into goals, placing inner tubes onto racks, hang-



Nathan Valencia, 16, takes down a box of supplies to work on a robot in East Palo Alto on April 25.

ing on bars or balance on beams.

The competition boasts 3,225 teams from over 34 countries and regions as of this year, and East Palo Alto Robotics believes they’re probably the scrappiest.

Greg Corsetto, one of the coaches who helped start the team seven years ago, said the whole East Palo Alto Robotics experience is very Silicon Valley. They work out of Coach Matt Pizzimenti’s garage, which he volunteered for the team to have a dedicated workspace and mostly rely on Home Depot parts and hand-me-down equipment to make it all happen.

“It feels like we’re starting our own company or something,” Becerra said.

But it’s not the fun and games you’d expect. Pizzimenti said the students “do a ton to balance between school and robotics and other things in life.”

“In the weeks between our first competition and the second, I’m pretty confident we worked something like 30-hour weeks,” Pizzimenti said. “I’m honestly mind-blown.”

For Pizzimenti, seeing the kids grow up is as much of a reward. He’s been coaching students like Becerra since she was 9.

“It’s so crazy remembering her as a fourth-grader doing Legos and seeing who she is today, not just in terms of her capabilities in building a robot, but also she’s our captain, she’s grown in her leadership role,” he said. “She’s gone from a very opinionated fourth grader to a still-very-opinionated senior who has developed keen leadership skills.”

The team, however, doesn’t do very well. They got 52 out of 59 in the Silicon Valley regional competition this year. But what they lack in experience and success they make up for in grit, dedication and an understanding that it takes time to build something truly great.

“It’s kind of sad to see your team lose basically every match, but it was also really exciting seeing all the hard work we put in. We were at Matt’s until 11:30 p.m. and midnight just trying to get it perfect,” Becerra said.

“We did a lot with what we had. And even though we kind of knew we weren’t going to win, that didn’t take away from anything. We were still really happy with how the robot turned out, and we grew as a team because of it.”