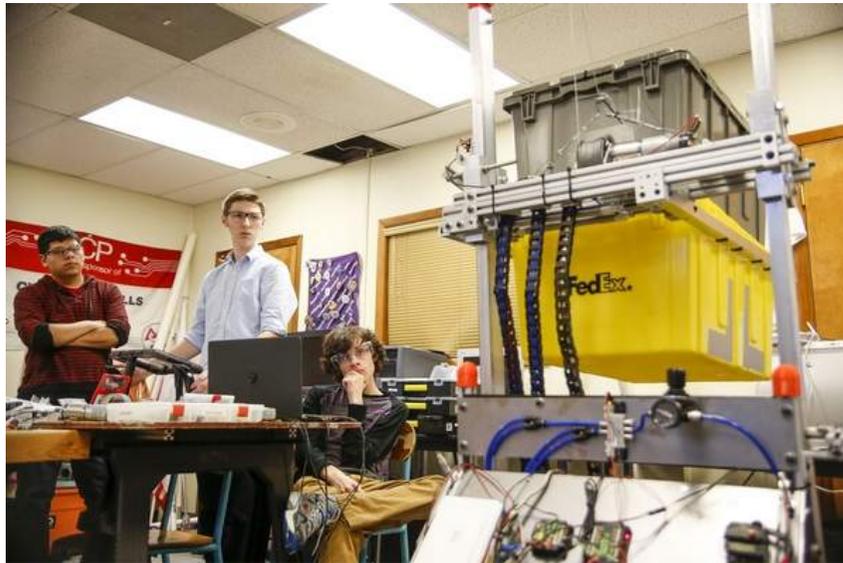




CYBORG Seagulls are ready to recycle

By [Edward Stratton](#)
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From left, Pedro Martinez, Austin Milliren and Connor Adams, test out their SARA (Stacking Agile Robot Assembly) robot during the CYBORG Seagulls robotic team meeting. The robot is designed to pick up recycling cans and cargo boxes and move them. The team will use SARA to compete in Recycle Rush, a robotics game based on recycling Thursday through Saturday.

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◀ 1 of 6 ▶

For more information on the CYBORG Seagulls and the FIRST Robotics Competition, visit www.team3673.org

Building SARA

More Info.

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The robot-building season for 25 Seaside and Astoria students on the C.Y.B.O.R.G. Seagulls robotics team ended Feb. 17.

SEASIDE — Seaside High School's student-built robot SARA is in the bag and ready to recycle.

The robot-building season for 25 Seaside and Astoria students on the CYBORG Seagulls robotics team ended Feb. 17. Now the team prepares to send 15 students to compete against 31 other teams in the divisional qualifier of the FIRST Robotics Competition starting Thursday in Oregon City.

The competition and its teams are chock-full of acronyms, including Seaside's team name (Creative Young Brains Observing and Redefining Greatness, or CYBORG) and the league they compete in (For Inspiration and Recognition of Science and Technology, or FIRST).

It resembles a bare bones forklift with pneumatically powered tines to close around the objects and a cable-driven forklift that lifts or lowers them into place.

From the top, the tread on its wheels creates an X shape. By applying force to each wheel and using trigonometry vectors, SARA moves forward, backward, diagonally and sideways inside the tight confines the team will have to operate in.

“That is really one of the things that I love about this program, is that instead of doing 30 more problems out of a math book, I can apply what I actually learned in math,” team captain and Seaside senior Austin Milliren said, adding that he previously wanted to be a doctor or lawyer before being exposed to robots interested him in engineering.

The team includes several students interested in Science, Technology, Engineering and Mathematics (STEM) majors. But it also includes students like Seaside senior Coral McNeill, who wants to be an English teacher but said she was recruited by Brown and finds building robots enjoyable.

“I’ve been vaguely interested in robotics most of my life,” said Sam Daire, a home-schooled student who travels from Astoria to be on the team. His father, Joe Garrison, a founder of the Scorcher Artisan Cooperative that operates the Blue Scorcher Bakery, studied engineering at the Massachusetts Institute of Technology and is one of several local advisers who helped the team build and program SARA.

Students take on different tasks within the CYBORG Seagulls, from the building of the robot and administration of the team to public outreach. Seaside Senior Savannah Cozart is one of the teammates tasked with forming a winning presentation for the Chairman’s Award part of the FIRST divisional competition.

“It’s just questions about how we outreach to the community,” said Cozart, who, if successful in front of a panel of industry judges, could help gain automatic advancement for her team into the next round of competition.

Pay to play

“We act like a full business,” said SHS technology teacher Mike Brown, the faculty adviser to the CYBORG Seagulls who offers high school credit for students who spend at least 66 hours working on SARA. “It’s a great opportunity to show kids how it actually works.”

The \$5,000 the team pays to be in the FIRST Robotics Competition covers only a basic robot-building kit — a chassis, motors, motor controllers and other parts. The total cost of last year’s robot, Milliren said, including travel to competitions and other team expenses, was more than \$24,000.

Brown and his students wrote grants between August and October and sought sponsors, which they’ve gathered nearly 40 of this year, for an operating budget of more than \$16,000. The sponsors range in size from small businesses, individuals and city governments on the North Coast to The Boeing Co., Halliburton and the Oregon Department of Education.

Expanding STEM

Being on the CYBORG Seagulls teaches mechanical skills that have to a large extent disappeared from schools, Brown said. “Over the last 20 years, it’s just been going away.”

But now the CYBORG Seagulls are at the forefront of a renewed push toward robotics in the classroom. Warrenton High

School has a grant-funded STEM course building drones and underwater robots. A club run through Clatsop Community College's physics department competes in the Marine Advanced Technology Education's underwater robot competition.

The FIRST programs were started in 1992 by Segway Human Transporter inventor Dean Kamen. In addition to the CYBORG Seagulls, Seaside Heights Elementary School and Warrenton Grade School have both recently added FIRST Lego League junior robotics teams.

Milliren, who helped start the team at Seaside Heights for his senior Pacifica project, said it can sometimes be difficult to have these programs get students interested, without all the advanced industry surrounding schools like in the Portland metro area.

Astoria Junior Elijah Hirsch, said he only found out about the CYBORG Seagulls through his parents, who both teach at Seaside. The team has impressed him so much that Hirsch is currently gauging the interest in starting one up north.

"There are enough people up in Astoria who are interested in the science and technology area that it should be possible to get a club started."



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