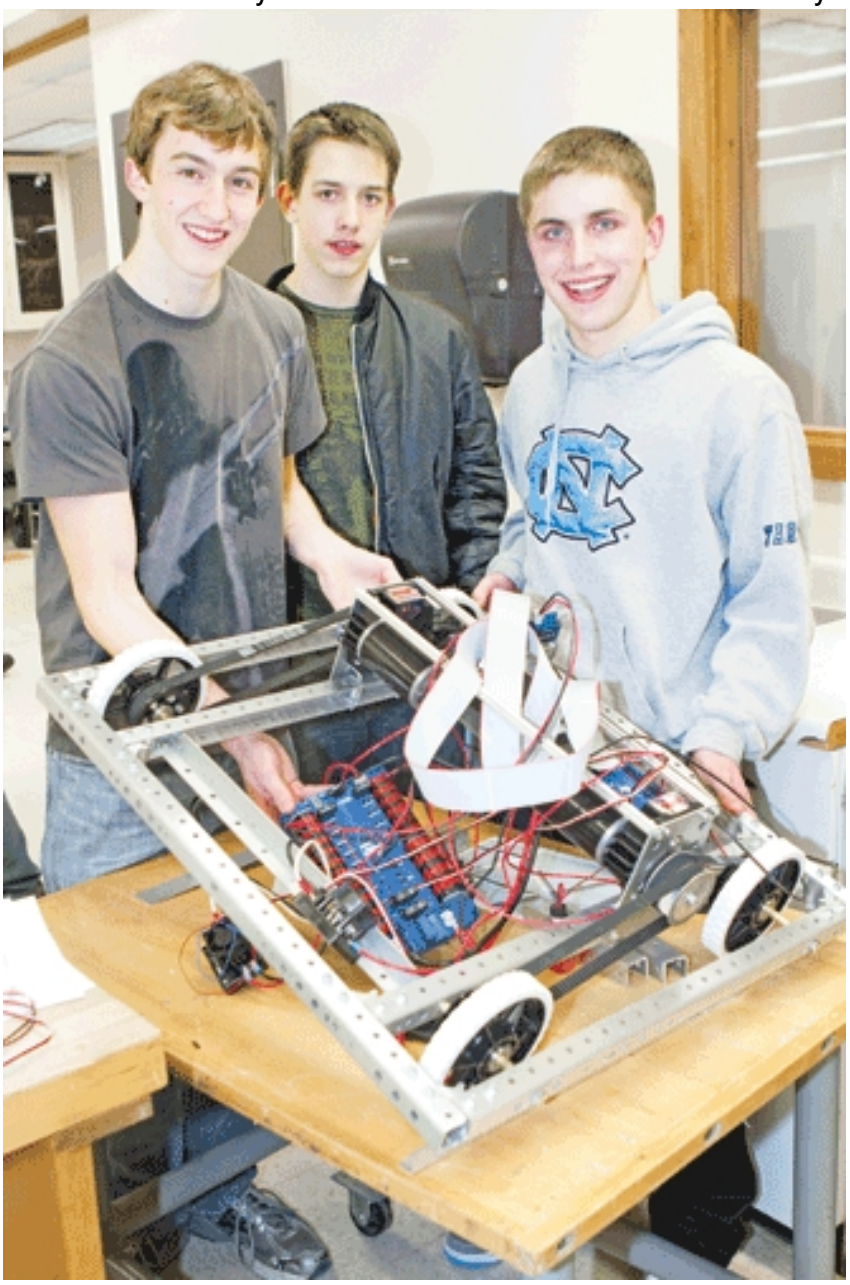
http://www.ozaukeepress.com/images/011713/robotSM.png**Port High PiraTech robotics team and a corps of mentors are working overtime to build a robot for a competition that has inspired interest in engineering, science**

The clock is ticking for the 36 members of the recently formed Port Washington High School robotics team.

They have less than six week to build a robot that can throw Frisbees and climb towers, preferably better and faster than robots created by thousands of teams across the country and from a handful of other nations.



That's why members of Port PiraTech — a name that plays on the Port High Pirates nickname — and a corps of mentors that includes teachers, professional engineers and

designers, as well as other volunteers, are working from 6 to 10 p.m. four nights a week and 8 a.m. to 3 p.m. Saturdays to build a robot from the ground up to compete in the FIRST Robotics Competition.

"We have to ship our robot on Feb. 19 whether it works or not," said Alec Belling, a technology and engineering teacher at Thomas Jefferson Middle School in Port who is one of the robotics team advisers.

"At last Friday's meeting, we had 27 students working on the robot from 6 to past 9:30 p.m. This was a Friday night, which shows the level of commitment these kids have to this project."

To understand that commitment, it's important to understand the origin of the team.

Last year, three sophomores — Daniel Gardner, Joe Eichenhofer and Taylor Godersky — approached Belling with the idea of starting a team after learning about the FIRST Robotics Competition. They didn't have to explain the contest to Belling or ask him twice.

"I was on a robotics team my junior and senior years of high school. Then I mentored that same team," Belling said. "One of the reasons I'm a tech-ed teacher is because of that experience. When the students came to me, how could I say no to an experience that changed my life?"

Belling took the idea of starting a team to the Port Washington-Saukville School District's STEM Committee, a collaboration between the district and area industries whose mission it is to promote science, technology, engineering and math in a way that makes it appealing to students.

The robotics team was an instant hit for reasons articulated by a member who spoke to the School Board Monday.

"If there's anything that's going to get kids psyched about engineering, this is it," junior Joe Babcock said.

Also at Monday's meeting, the board accepted a $7,500 grant from Milwaukee-based Rockwell Automation that will pay the start-up costs of the robotics team.

Port Washington resident Jim Valasek, a senior project engineer at Rockwell who has been involved in the FIRST Robotics Competition for years by virtue of his company's support of the program, told the School Board that he was judging a competition when a fellow judge told him Port High was trying to start a team. Valasek knew how to help.

"My hope is that by starting the first robotics team at the high school these students can mentor other teams and this will continue for years to come," he said.

Rockwell, Valasek said, is investing in its future workforce by donating to Port High's team and others like it.

"We believe in engineering our future and helping prepare students for STEM careers," he said.

Although there are donors and mentors to help students, it's ultimately up to the team to handle all the details involved in building robot.

On Jan. 5, FIRST Robotics Competition announced the rules for this year's large robot category contest, called Ultimate Ascent, which is the category PiraTech is competing in. Teams must build robots weighing no more than 120 pounds that can throw discs into goals, then pick them up, reload and throw again, and finally climb a three-tier tower.

"The climbing portion is going to be the most challenging," Belling said. "A 120-pound robot is pretty heavy."

Designing and building the robot is just part of the team's task. PiraTech has divided into five sub-teams covering the areas of business, design, manufacturing, media and programming. While some students are engineering the drivetrain of the robot, others are developing websites to track the progress of the project, designing logos and other marketing materials and sending letters to area businesses and civic organizations seeking donations to cover the remaining cost of the project.

PiraTech has received about $3,000 in donations in addition to the Rockwell grant and is working to raise $3,000 to $5,000 more, Belling said.

Advising team members, who literally started the project with a box of parts, is a corps of volunteer mentors — 27 at last count, including seven teachers, Belling said. That doesn't include the team's three advisors, who in addition to Belling include high school technology teachers Ryan Volke and Bill Kunst.

"The students bring imagination to the project while mentors do a good job telling the students what's possible and what's not," Belling said. "The mentors bring their experience to the project."

Valasek said PiraTech's corps of advisers is the envy of other robotics teams.

"I'm pretty sure there's no other team with a mentor pool the size of this one," he said.

Port High Principal Eric Burke noted that the project has attracted mentors and teachers with varied backgrounds and areas of expertise. The same is true of the students involved, he said.

"The team is made up of more than just kids in the tech-ed program," Burke said. "It's truly a cross section of our school."

The concept of having professionals advise robotic teams is central to the FIRST Robotics Competition, which founder Dean Kamen, a renowned inventor, dubbed "the varsity sport for the mind."

The goal of the organization and the competitions it organizes is to inspire young people to become leaders in the fields of science, engineering and technology, and much of that inspiration is intended to come from mentors.

"Dean Kamen wants students to get excited about math and science like they do about sports," Belling said. "He wants professional designers and engineers to become role models like sports stars are role models for young athletes."

FIRST Robotics also insists on a high level of sportsmanship to foster the concept that fierce competition and mutual gain are not mutually exclusive concepts. The organization calls this concept "gracious professionalism" and insists on it from teams.

The organization also preaches "coopertition," which it defines as the act of showing kindness and respect in the face of fierce competition.

"It's really pretty amazing to see this in action," Belling said. "During competitions, you'll literally see members from one team run over to another team to help with a problem."

Members of PiraTech will get their first look at competition during a regional contest March 21 through March 23 at the U.S. Cellular Arena in Milwaukee.

"It's an amazing scene," Belling said. "It's like a Super Bowl halftime show the entire time. There's flashing lights and teams with wild uniforms and dyed hair."

Burke said he will make sure PiraTech has plenty of support at its first event.

"We're going to promote this like a sporting event," he said. "We're going to have plenty of kids come down to cheer their team on."

PiraTech will host an open house from 6 to 8 p.m. Monday, Feb. 4, in room 423 of the high school, 427 W. Jackson St., to give the public a sneak peak at its robot.

The team is also looking for additional mentors. "It is important to note that you don't have to be a technical-minded individual to mentor," Belling said. "We have mentors for building the robot, but we also have mentors to help with project planning, logistics and fundraising."

Anyone interested in being a mentor should contact Belling at alec.belling@pwssd.k12.wi.us or Burke at
eric.burke@pwssd.k12.wi.us.
Burke can also be reached at 268-5500.

In addition, the team continues to seek sponsors to defray the cost of the project. Anyone

wishing to donate can do so by contacting Belling or Burke.

Image Information: PORT WASHINGTON HIGH SCHOOL PiraTech members (from left) Skyler Sandlin, Jacob Kultgen and Payton Gardipee worked on an early version of the drivetrain for the robot their team is building. At left is the team logo designed by students Joe Eichenhofer and Daniel Gardner. Photo by Bill Schanen IV