

Mecha Mules News

Quarterly Issue 2-January 2023

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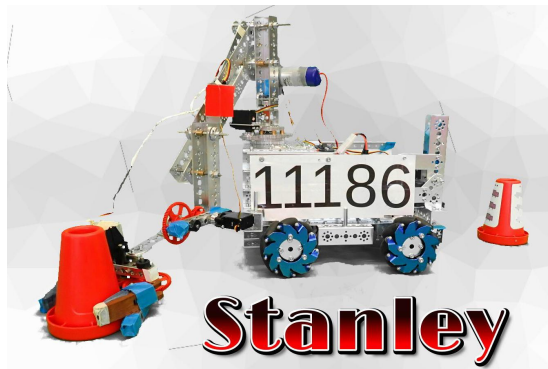
On to State!!!

By Jessica Vik-Mentor

What great news to celebrate on the first day of Christmas break! The Mecha Mules are going to state, again! The articles the students have written will give you a glimpse into their journey on making that goal. Their state tournament is January 28, 2023 in Seattle.

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October-December



First Tech Challenge (FTC) League 1

By Peter Vik-Driver

The Mecha Mule's first FTC competition of the season was held at Lower Columbia College (LCC) in Longview, Washington on November 5th, 2022. They ran their first robot "Stanley", which has a holonomic drivetrain and a rotating 4-bar arm with wrist. This set-up allowed them to have an omni-directional movement coupled with the ability to reach the medium pylons. Their strategy and autonomous program made them the dominating team of all of their matches.



The drive team worked with Geared Reaction to score points for the blue side. At the end of competition they were ranked #1 going into the next competition.

This season brought a new aspect of scouting to the table. Strategizing at the queuing table was somewhat frenzied and left some doors unopened. So they decided to go and talk with their partner ahead of the match, but this became difficult to follow because too many people were talking at the same time. The solution they found was to get a sheet of paper and two different colored pens in order to draw the plan just as is done in other sports. This worked tremendously well in organizing a strategy and solved the miscommunication among the team.

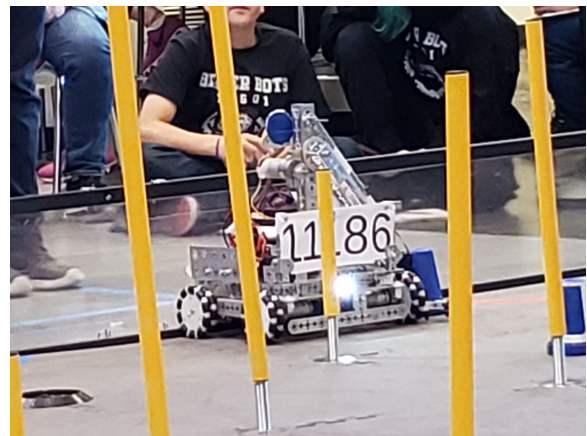
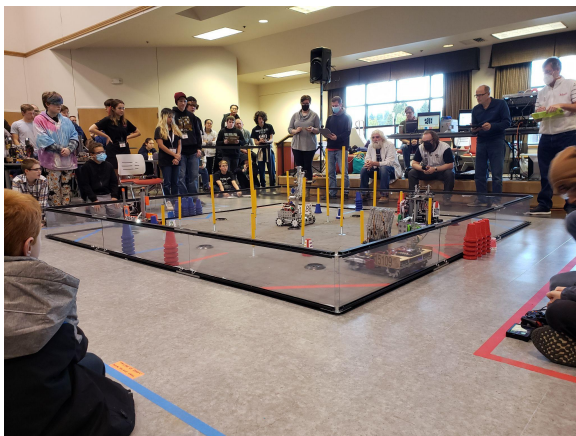
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FTC League 2

By Annelise Vik-Scout

The Mecha Mules December 3rd competition was held at LCC in Longview. It went very well for us, better than we hoped. Last year our second competition was a failure. But that didn't happen this year. We started scouting right off the bat and noticed that a lot of the teams were all making last minute adjustments or fixes to their robots. Some even asked us to come back later. They were elbow deep in last minute changes.



Picture credit: Emmaline Vik-a Mecha Mules sibling

Our driver for this competition was Nathan Garrett on the robot, Hera, built by Alan Smith. We saw in practice that Hera was easier and more efficient to run than our last bot, Stanley. Nathan did an excellent job driving, executing a circuit almost every time. There was one alliance with which we ended up getting two circuits, but only one circuit was counted for points. Our autonomous program worked four out of six times. We were one of the few teams who had an autonomous program. In the end, we won all of our matches. (An autonomously programmed robot operates without a human driver.)



Picture credit: Amanda Heston-Robotics Coach

FTC Interleague Competition

By Jamey Heston-Scout

On December 17, 2022, the Wahkiakum robotics team went to an FTC Interleague in Battle Ground, WA. At this tournament, 27 teams displayed their efforts in driving, engineering, and writing skills. On our second match of the competition, a mishap involving another team's cone which entered one of our robot's major subsystems prevented us from scoring. The rules state that you are not permitted to be in control of more than one cone. Even though this happened, Nathan, our head driver was able to

rock the cone out using some impressive dance moves. Some other teams were not relying heavily on scouting as well as ours. This meant that we had an advantage in the way that we moved on the course and in our presentations. I think that overall the competition went well for us. We were pleasantly surprised that we were awarded 3rd place in Inspire, the highest level award. This meant that we would be going to State and could prepare to dominate the competition.



Coaches Corner

By Amanda Heston-Robotics Club Coach

This fall brought both new and familiar experiences for me as we started the Mecha Mule's robotics year. I didn't arrive on the scene until just before League 2 last year, so starting the FTC season with the kids was a new experience for me. Over the summer, I really looked forward to seeing the kids again and watching how competing and traveling together changed the dynamics in the group. The collaboration and team spirit was alive and well, with much thanks to ending last season on a high note at Seaperch. The kids really took off just moments after the FTC PowerPlay season reveal, planning and brainstorming for their next challenge. They didn't miss a beat. It was exciting to watch the progress as the weeks went by; some writers were now building, some builders were now programming, and the kids' maturity was evident in both their solo and teamwork. This is one of my favorite parts of being a coach; watching the kids grow together and feeling that sense of camaraderie. One of my other favorite aspects of being a coach is working through crunch time together. While, yes, it's time-consuming, tiring, and stressful; we are more connected and motivated the closer we get to the finish line. The kids work amazingly well under pressure. They buckle down and put in the time, concentration, and effort to get the job done. A great example is our lead driver, Nathan Garrett. He tends to get in his head and be

overly critical of himself on competition day, but it never affects his driving capability. The kid is a professional; he shakes off the jitters and pulls out amazing performance after amazing performance. We have a great group of kids with talent, potential, and motivation that grows with every meeting and competition. I can't wait for what's to come.



Wahkiakum joins SkillsUSA

By Ron Wright-FTC, SkillsUSA Coach, Robotics Mentor

SkillsUSA is a national CTSO (Career Technical Student Organization) that sponsors over a hundred different competitions with thousands of schools involved. As its name suggests, it promotes careers in many technical fields, including Robotics, Engineering, Computer Science and Internet

Technology. This year we entered into one of their competitions - Mobile Robotics Technology - with three teams going to the SW Washington regionals at Ilwaco on January 26.



Team leaders this year are Elijah, Klayton, Reagen and Cor. Good luck!! In addition to building and running their FTC-sized robot they need to produce a short video on how they used the Engineering Design Process, and a 5-page Engineering Portfolio. Next year, in addition to Mobile Robotics Automation, we expect to enter more events, such as:

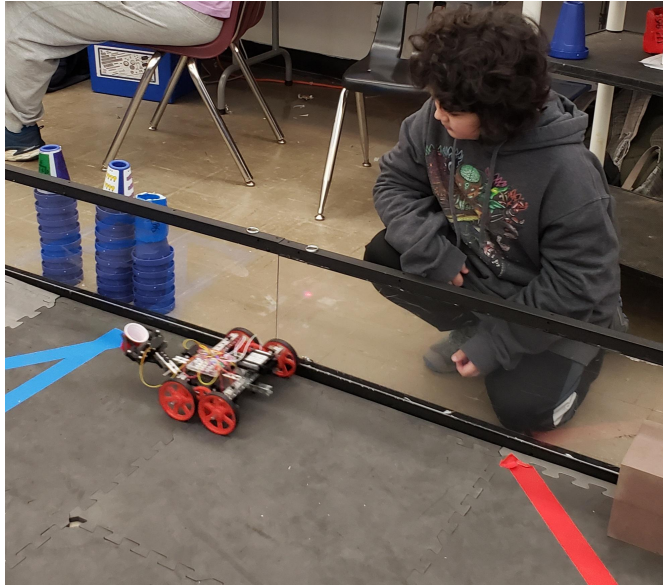
Additive Manufacturing Automated Manufacturing Technology CNC
Programmer

Computer Programming Electronics Technology Engineering
Technology/Design

Entrepreneurship Information Technology Services Internetworking

Mechatronics Mobile Robotics Technology Robotics and Automation
Technology

Robotics Urban Search and Rescue Telecommunications Cabling

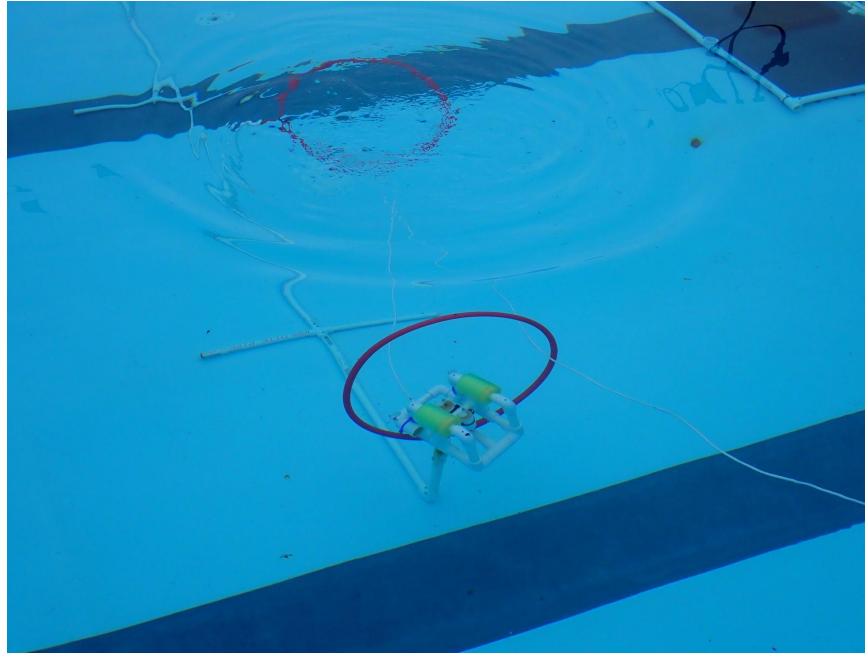


Wahkiakum Middle School Robotics

By Ron Wright-FTC, SkillsUSA Coach, Robotics Mentor

Middle School Robotics restarted this September with help from Wahkiakum 4H using new robotics kits: Tetrax Prime, using the Tetrax Pulse controller, a form of the ubiquitous Arduino Uno. This uses the same basic coding environment as our high school robotics hardware. Our first competition this year will be the inaugural KM Challenge Middle School Robotics Cup, held at Naselle Jan 20th. Five teams from Wahkikum, six from Naselle and two from a homeschool club will be competing to see which brings home the trophy.

Whereas FTC and SkillsUSA robots are roughly 18"x18"x18", for the MS KM Cup these are 16"x14"x12" and use smaller 6v motors and batteries. The robots compete for 30 seconds using autonomous mode then an additional 2 minutes in teleop (driver controlled) mode, like for FTC. In each match, two robots work together, competing against two other teams, to move balls and cups into scoring goals, and in the last 30 seconds compete for "king of the mountain" honors to earn bonus points.



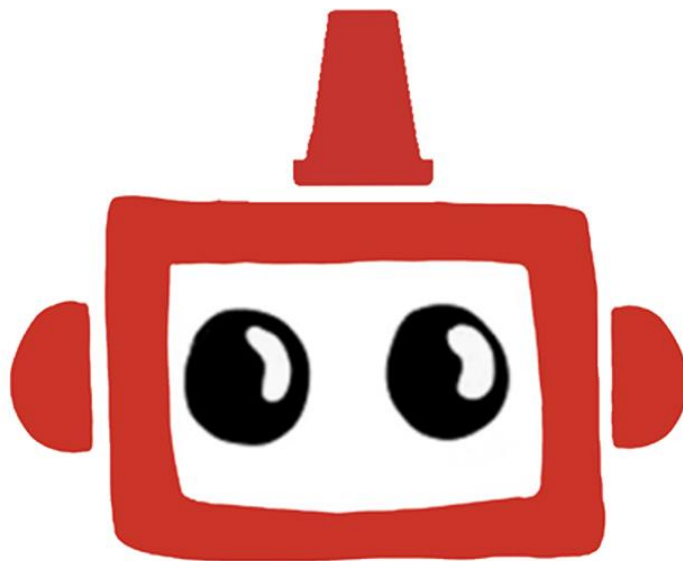
SeaPerch-2022 Season

Spring 2023 Robotics: SeaPerch

By Ron Wright-FTC, SkillsUSA Coach, Robotics Mentor

As soon as FTC and SkillsUSA are completed Mecha Mules jump directly into SeaPerch. Teams of up to eight students design, build, and operate an underwater robot to solve a series of technical problems. Our success last year (2nd place in the Open Division at Internationals in Maryland) has inspired us to do well again this year. The Qualifier Tournament is again at the Cathlamet Pool, but a little earlier in the year: Friday March 31. We expect to have at least two HS teams and one MS team. Amanda is our head coach for "Mecha-Mulles-A", Josh is our head coach for "Mecha-Mules-J", and we have the hardware for several more. We are looking for more coaches and mentors. Email Ron at rwright@waksd.k12.wa.us if you want to help out.

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