Cadillac Connectors Robotics 5086 | January 27, 2017

ROBO TIMES

Full *STEAM* Ahead

"Most of the time you will fail but you will also occasionally succeed. These occasional successes make all the hard work and sacrifice worthwhile."

CADILLAC-While most kids are heading off after school to ski or have snowball fights and goof around, a different group heads down to room #19 for a different aspect of after school activity. From approximately 3-6 o'clock a strange array of noises can be heard drifting from the Jr. High robot room. Grinding gears, blasting 2000's music, and the noise of a soldering iron drift down the hallway. Watch your step in the hall, and on the stairwell. Our robot needs some target practice after all, and those lockers make a pretty good bucket. Don't worry we have safety glasses.

A peek into the main headquarters of this activity you may find a boisterous sight. Along the far wall our business team works diligently away at our various award applications and media outreach. The mechanical team scatters from side to side, and in and out of the room, fixing and acquiring our current in/outfeed system with new attachments. Mentors circle about, guiding and offering suggestions to any problems or newest add. And through it all you hear the various taunts and teasing that comes from any bonded family. This is your daily meeting of the Cadillac Connectors Robotics Team.

It's not just one team?

Our team is divided into two major groups: the EMO team and the NEMO team.

EMO stands for Engineering Mechanical Organization. This branch of our team deals with the creation and running of our robot. Various sub-teams under this category include Mechanical (physical building of robot structure), CAD (design system for robot parts), Programming (to control the robot), Arena (creation of practice fields), Rules, and Electrical.

In contrast, our NEMO (Non-Engineering Mechanical Organization) team deals with the other aspect of Robotics including Safety, Marketing, Media, Accounting, and Awards. It's not just about building a sweet looking robot (though that is pretty fun). Multiple teams put forth effort into all the aspects of Robotics. Some of the NEMO aspects of robotics may get a team directly enrolled for the state competition!

Community Corner

Shannon Metzger leads a group through the iron, oatmeal, and salt lab exploring the separation properties of a mixture.

Messy Science Day

TUSTIN- This past Saturday, two of our Connectors: Tucker Bachman and Shannon Metzger, volunteered at the Kettunen Center's Messy Science Day. This center is run by Michigan's 4-H youth development program which encourages kids to learn life skills. During this event children pre-K to second grade traveled through stations that dealt with various science concepts such as: mixtures and solutions; solids, liquids and gases; equilibrium: and the anatomy and function of different animal body parts. Tucker and Shannon led the kids through the activity and asked them their was happening: the *why* principle in science. They worked alongside the kids during the experiments in separating a mixture of iron, salt, and sand: explored the teeth of fossil heads: and building towers out of blocks, dixie cups, and popsicle sticks. Our volunteers also got down and messy in the experiments involving shaving cream compounds and vinegar/Jello baking soda reactions. What's Messy Science Day without a little mess? Big thank you to the Kettunen Center of Tustin for allowing our Connectors to help out!

Team members Anna Marie Seitter and Kyle Leesch work on some soldering during Wednesday's build.

CADILLAC- Help support our team as we participate in the 2017 North American Snow Festival Oasis/FRC Polar Dip! All proceeds go towards the OASIS family resource center located in downtown Cadillac. This organization helps out individuals in our community affected by domestic abuse. Each of our dippers participating requires a donation of $30. Our goal is to have 15 participating dippers. If interested in sponsoring one of our team contact Shannon Metzger at shametz578@gmail.com. The dip-date is 2 pm Saturday, February 4th, location across from Consumers by the Walking bridge off Chestnut Street.

Top: Alex Whipple and Max Stange work with mentor Craig Peters on some wiring for the robot's infeed system.

Mechanically

Seth and Leif Olson, Andrew Peters, and Amanda Blackmer work on the mechanical systems of the robot.

Mechanical work on our robot is underway. The primary focus right now is completing a fully functioning infeed/outfeed system. During the competition this system will be in charge of scooping up balls and firing them into smokestacks. The greater number of scored balls increases the water pressure of a connected pipe. Teams score points with increased pressure.

With prototyping of this system finally done our mechanical team has been hard at work making their ideas a reality. Mechanical captain Alex Whipple, and teammates Seth and Leif Olson, Andrew Peters, and Kyle Pike have been hard at work creating and testing out their ideas. Mechanics of the current system consist of a ventilation shaft where dropped balls travel down a short airway into an awaiting motor. Attached to this motor are two large wheels separated by a narrow space. One gear spins in a counterclockwise motion, and the other spins in a clockwise motion. Upon hitting these gears the ball is blasted out a large PVC pipe (generously donated by Bigfoot Manufacturing) that serves as an barrel to increase accuracy in order to hit our target.. Testing has resulted in a good height of several feet and variable accuracy. Needed additions to the robot include a rope-climbing system and a hopper.

Programming

Programming Captain: Josh Jacobson has been spectacular at planning a fully functioning drive program and working vision system. To be able to control a robot, commands must be coded into a driving program. Drivers of the robot use a pair of Xbox controllers connected to this program, much like a videogame, to control movement and aim.

Josh has taken on the challenge of training one of our newcomers: Tucker Backman, in the art of coding. Daily Josh works with Tucker daily and guides him through the coding program. Tucker, under Josh's guidance, has created multiple coding that will be put directly in our robot.

Even with his busy schedule Josh finds time to help other teams in need. He has come in contact with Rookie team 6600: the Baldwin Panthers. Josh communicates with Baldwin and has been helping their programmers learn about the process of programming a functioning system. Though we may be competitors on the field, the true spirit of *FIRST* is found in all aspects in, and out of the playing field.

Media and Business

Head accountant Kayla Whipple has been doing a spectacular job in managing our accounts. Marketing captain McKinsey Crozier has been hard at work contacting and organizing our sponsorships. Media director Kyle Leesch has made sure all our social media sites are updated regularly with our current progress.

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connectors5086.org

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Current progress on the mechanical side involves a fully working infeed and outfeed system for our robot to collect and shoot balls with at competition.

Calendar:

Daily build From 3-6pm Every Weekday
Saturday February 4th: 2017 NASF Oasis/FRC Polar Dip: Cadillac, across from Consumers by Walking Bridge, Chestnut Street
March 2nd-4th: Competition: Kettering University, 1700 W. Third Ave / University Ave Flint, MI, United States (map)
April 6-8th: TC Competition, Traverse City Central HIgh School

This year's theme is centered around the Victorian steampunk era which is characterized by its use of retro steam-powered machinery.

Our goal this season is to make it to states, a first for the team as we have only gone as far as semi-finals in 2016 season with the robot Centurion. To do this we would like to openly invite all members of the community to contribute to our cause. Our numbers and outreach into our community have grown tremendously since our humble beginnings in 2014. With these added statistics, our dreams have come closer, but in order to reach them we desperately need funding to help build our robot as well as cover fees for programming and competition traveling. To any interested, our Grant form, Sponsorship pamphlet ,and Sponsor Information Packet are available through these links. If interested, or if you know someone who would be, please contact us at any one of our social media sites or to Shannon Metzger at shametz578@gmail.com. We look forward to hearing from you!

That's a Fact

5086

What's in a Number?

Cadillac Connectors is commonly affiliated with the number 5086. What is the meaning of this number? The purpose of the number is to give a team a specific title that no other team may have. There may be another "Cadillac Connectors" team, but no other team may be called "Team 5086".It is a way judges and other teams may reference each other without getting confused with other teams.The number of a team may be picked or assigned.Additionally, we are not the 5,086 team to have created a *FIRST* Robotics team. In fact, not all numbers are filled in. There is no team 420 or 1337 (as of this moment). Teams just applying may receive or request numbers lower than ours. 5086 means a lot more than 5,086.

Our team would like to thank the teaching staff at Cadillac Senior High School for their support of our upcoming polar dip, and to the multiple organizations who have agreed to sponsor us:

Supporters ($50-200)**:** Lifetouch, Bandeen, Driver's Choice Auto & Truck, Networking Butler, BC Pizza

Advocates ($200-500)**:** Cadillac Computer, Family Eye Care Associates

Sustaining Sponsor ($500-1000):Stagg Machine Products, Godfrey Chevrolet, Exxon Mobile, SpecTech, Cadillac ENT

Executive Sponsors ($1000-2500)**:** *Rexair, Kendall Electric, Baker College, BorgWarner, Cadillac Castings, Avon Automotive*

Visionary Partners ($2500+) *Cadillac Area Industrial Group*

Thank You *!*

5086 Cadillac Connectors

"Why did the robot go back to robot school?"
-his skills were getting a little rusty

5086 Cadillac Connectors

Kyle Pike, Christian Croskey, and Leif Olson test out the infeed/outfeed system during Tuesday's build session.

"Connecting our students to their robot, each other, and our community since 2014"

Team members Amanda Blackmer and Victor Sawicki work on gathering information for a Kenwood Elementary Winter Safety presentation.