

AUGUST 2018



TITAN ROBOTICS

2018 SEASON RECAP



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who we are

THE TEAM

FRC Team 2022 Titan Robotics was founded in the fall of 2006 by students from the Illinois Mathematics and Science Academy, which has been named the #1 public high school in 2018 by Niche. Titan Robotics has a primarily student-led structure, with crucial guidance in logistics, design, and outreach from our coach and mentors. In eleven years, our team has grown from one mentor and three students to nine mentors and 53 students. We use the lessons we gain from our experiences in developing ideas, building robots, and competing in FRC to improve and adjust team protocols, all while promoting our key values: collaboration, learning, and innovation!



what is FRC

FIRST is a non-profit organization that designs robotics programs, including FIRST LEGO League Jr. (FLL Jr.), FIRST LEGO League (FLL), FIRST Tech Challenge (FTC), and notably, the FIRST Robotics Competition (FRC). FRC is an international high school robotics competition that promotes team cooperation to build a robot for an annual competition challenge, within a six-week time period. FRC increases interest in STEM fields by allowing students to explore their robotics passion and challenging students in STEM while maintaining a fun experience.



2018 season

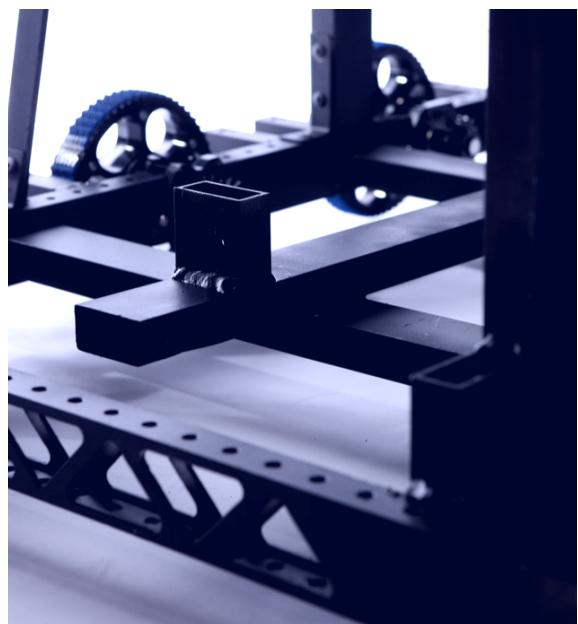
THE GAME

The 2018 event was a simulation of robots and their human players being trapped in an arcade game, called "POWER UP". To escape, robots had to pick up Power Cube blocks and carry them to a designated area. To add to the video-game atmosphere, robots could earn power-ups for temporary advantages. The goal of the simulation was for the robot to climb its way up a scale, in order to "face the Boss" and free the team from the arcade game.

build season

THE BUILDUP

Titan Robotics spent six intense weeks building a robot for the aforementioned 2018 FIRST Robotics Competition (FRC). Despite running into several issues during construction, including single-shift gears being out of stock, an entire redesign for the robot grabber, and our school's unexpected week-long closure during prime building time, the team pulled together by working long hours on weekends to plan, build, and program the final robot.



competition season

THE TEST

Titan Robotics attended two competitions: the Midwest Regional competition and the St. Louis Regional competition, and received our first award in four years, the Entrepreneurship Award, at the latter.



achievements

RECOGNITION AND RESISTANCE

During the 2018 competition season, our team was awarded the Entrepreneurship Award at the St. Louis Regional FRC competition. This award shows the team's exemplary connection and networking abilities and comprehensive business plan, which is an area in which our team experienced considerable growth this past year. In fact, the FIRST organization recognized Anisha Gubba, head of Business Team, as a finalist for the FIRST Dean's List Award, due to her contribution to our team this year. Thanks to her leadership and the work of others, our team transitioned into a fully student-operated organization this past year through the creation of the business team. Before this season, the work of the business team was managed by our school's business office, which limited our network and support system. Caterpillar was our only external sponsor. Due to some administrative issues, we became at risk of losing our one source of funds, and thus the team.



However, our members pulled together and organized a business team. With the success of this group, our team went from having one outside sponsor to a total of five outside sponsors by the end of the 2018 season! This meant that we can now securely operate our team with access to more materials and professional machining. Not only did our sponsor network expand, but many mentors joined our team as well, offering their guidance and further strengthening our support system. Our marketing successes carried into success in other parts of our team, as our team created our most refined robot in the history of Titan Robotics, which was a major accomplishment.

outreach

THIS YEAR

In our school community, we participated in Preview Days with a tour of our lab and held a demonstration of our robot in a Girls in2 STEM event. Several Titan members volunteered at a FLL regional competition and a FTC state competition. Furthermore, members of our team helped spread STEM in their home communities by helping run events and mentoring at STEM camps such as the Girls Engaged in Math and Science Camp at UIUC. A member of our CAD (Computer-Aided Design) Team started a YouTube channel named “The Cadding Classroom,” posting video tutorials on CAD.



IN THE FUTURE

Outreach remains an integral part of our team mission, but we did not experience large growth in this area this year because we had to place a greater emphasis on solving our monetary and administrative concerns. Our main outreach initiatives this year were IMSA's Girls IN2 STEM and Preview Day programs and mentoring FTC teams. We reached about 50 middle-schoolers, 2000 prospective IMSA students and parents, and 2000 younger attendees of the FTC (FIRST Tech Challenge) State tournament. Moving forward, we will continue collaborating with the organizations that we have established ties with, and we plan to expand into more team-run events. A partnership we have begun for next year is demonstrating our robots specifically to kids with underprivileged backgrounds. We hope to help these students start their own FLL robotics teams via Exodus, a tutoring organization at IMSA that works with elementary and middle school students. Working with other clubs at our school is a great source of potential members for the coming years! We want to get students from Girls IN2 STEM and Girls Who Code more involved with our team, and we aim to open more volunteering opportunities in STEM via Key Club, IMSA's community service organization. Ultimately, we hope to reach out to more clubs and introduce them to the values of our own robotics team, spreading STEM and the mission of FIRST through all possible outlets at our school.

improvements

GROWTH

Following the difficulties with funding and support our team experienced in the 2017 season, we are happy to say that we have experienced a lot of growth in 2018! Thanks to the hard work of our existing members and newcomers, we were able to sustain ourselves as an operational team this past year. We solidified our Business Team, and have been working to get in contact with potential sponsors and mentors. Over the past school year, our team has grown from 30 to 53 active members, and we took on 21 new mentors! In addition to internal support from our school, our support system has now expanded to six external sponsors, including our veteran sponsor Caterpillar and five new sponsors this past year: Berthold Electric, Share Machining, Bachman Machining, Vital Protein, and Art by Bill. Not only were we provided with financial support, these partnerships gave us a reliable source of sheet metal and professional machining, something that our team never had in previous years.



STRUCTURAL CHANGES

The team added the facilitator position for certain members. While, in the past, all experienced members have participated in the instruction of new members, the new title of "facilitator" formalizes the role and calls for a more solidified training curriculum. This will ensure that new members receive the necessary training in their prospective fields to contribute to the building the robot during build season.



goals

WHAT THE FUTURE HOLDS

Titan Robotics will continue its work during the preseason time of September to January. The preseason is typically used to introduce new members to the team, teach them the skills required to build a competitive robot, and generally help develop team camaraderie between the old members and the new. With all this preseason preparation on the part of our dedicated student board, we hope to improve our skills, performance, and teamwork this coming season with our new members, mentors and sponsors.

thanks

TO THOSE WHO SUPPORT US

We would like to give many thanks to past and present sponsors, mentors, coaches, students, and families of students for their dedication, time, and efforts. It is the help of these individuals that created and molded Titan Robotics into what it is now.

We would also like to thank and wish the best of luck to the seniors for their time with Titan Robotics. Although they will be missed, we are excited to see what our new sophomore members will accomplish in their three years on Titan Robotics!

