



# TEAM SUSTAINABILITY

## 2023

# 5427 Team Sustainability

## Table of Contents



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I.	Team Decision Making and Division of Workload	Page 3
II.	Team Retention of Students, Mentors, and Sponsors	Page 4
III.	Team Sustainability Best Practices	Page 4
IV.	Recruiting & Training of Future Team Members	Page 5
V.	Success Celebration and Lessons Learned Documentation	Page 5
VI.	Team Funding and Budget	Page 6

## I. Team Decision Making and Division of Workload

Team 5427 is in their ninth year of competing in FRC. Our team was founded by a student a year earlier, competing in two offseason events using other teams' backup robots. We joined FIRST in the fall of 2013 and built our first robot during the 2014 season. We are a school club at Tompkins High School in Katy ISD in Katy, Texas. It is a large 6A high school with a school population of over 3,500. Our team has on average around 100+ student members each year. We compete as the Steel Talons, #5427.

Katy ISD robotics teams have a state-of-the-art STEM center, the Robert Shaw Center (RSC), where the high school teams are provided a "bay" to build their robots each year. The teams work together to build the practice field each competition season and share the practice field. The RSC is about 15 minutes north of the high school.

Senior Mentors guide and supervise the team of students. The Student officers and Team Leads manage the workload and day to day operations of the student members. New officers are selected each May who have two years of team experience and are juniors or seniors. Students who are Team Leads require one year of experience with the team to be in leadership.

The Lead Build Mentor guides the student leaders through the Build Season, Competition Season, and Offseason. He supervises robot design, prototypes, CAD, and implementation. He also supervises programming, electrical, and mechanical systems. And he and the Build Mentors provide tool and safety training each fall semester and continues the training over the summer months.

The Business Mentor meets with student leaders to lay out the upcoming school year calendar, fundraising and recruiting opportunities, and new student onboarding.

### Student Leaders

<b>President</b> Rohan Kataram	<b>Vice-President of Programming</b> Victoria Zhang
<b>Vice-President of Mechanical</b> Rohit Modi	<b>Vice-President of Electrical</b> Tarana Nagarajan
<b>Vice-President Outreach</b> Ankitaa Sampath	<b>Treasurer</b> Anay Unija
<b>Outreach Team Leads</b> Madison Huang & Zoe Vo	<b>Secretary</b> Ashwin Subramanian
<b>Outreach Team Leads</b> Madison Huang & Zoe Vo	<b>Scouting Team Lead</b> Sara Ahmed

## II. Team Retention of Students, Mentors, and Sponsors

- We recruit new to Tompkins HS students at the school's new student event in August, future 9<sup>th</sup> grader event in January, and through our summer camps.
- We also have students who are 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> graders join the team. We limit the team to around 100 students based on the space restrictions at our robot build site.
- We have a new student onboarding process and monthly student meetings to keep students engaged along with social and team events throughout the school year.
- We repeat the mantra that students can participate as much as they want or as little as they are able based on their academic schedule and other extracurricular activities. And we encourage students throughout the year to get involved with the team.

## III. Team Sustainability Best Practices

Here is what we believe are our Best Practices for our sustainability:

### A. Funding Resources

- Over the years we increased the student activity fee to \$200 per student instead of charging students and parents throughout the school year.
- We hold two summer camps over the summer that our students lead and we charge \$250 per camper. The summer camps are for kids aged 6 to 14 years. These two fundraising events help provide the minimum amount of funds we need for each season, so the stress of fundraising is reduced.
- We encourage parents to donate through employee matching funds opportunities. We have received the most outside funds through family members of students, especially students who have been in our program for four years. Parents want to give back by donating money.
- We also have our sponsor packet (included in folder) to share with companies who would be willing to donate to high school STEM opportunities. We usually email it in digital format.

### B. Recruitment & Retention

- We recruit students at the school's new student orientation in August, future 9<sup>th</sup> grader event in January, and through our summer camps.
- There are also students who are 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> graders who join the team. We limit the team capacity based on the space restrictions at our robot build site.
- We have a new student onboarding process and monthly student meetings to keep students engaged along with social and team events throughout the school year.
- We repeat the mantra that students can participate as much as they want or as little as they are able based on their academic schedule and other extracurricular activities.

## C. Team Success

- The experienced students are trained to mentor new and inexperienced students. Senior officers ensure they pass on their experiences and insights to less experienced juniors, sophomores, and freshmen.
- We have four founding mentors who steer the team even though all their own children have graduated from our program. Each year at our open house we recruit new parents to volunteer with the team and train and encourage them to mentor which requires more of a time commitment.

## IV. Recruiting & Training of Future Team Members

Each fall we accept new team members and returning students. All students need to complete the online membership form and pay the student activity fee that covers a teamwork shirt and competition shirt, and part of the competition fees and the build season costs. The team typically fills up by mid-September. We close the membership drive in October. New students are evaluated and trained in the fall preparing them for the Build Season. We also train and develop student skills over the summer by working on small projects like a new robot cart.

We have a large team Kickoff meeting at the high school with over 100 students attending. The students are trained in the engineering design process by our teacher sponsor. They brainstorm and present their ideas at the Kickoff.

During the summer and fall months, we provide tools, the Build system, and safety training. The VP of Programming has put together online training for new students to learn the Java language to code the robot. The school offers computer science classes but they don't provide the Java training until their sophomore year but we needed students to get their training a year earlier to help support the team. All the robot systems have online documentation plus we do hands-on training for the CAD/CAM process.

## V. Success Celebration and Lessons Learned Documentation

We have an end of season banquet at a wedding reception venue where students dress up and families are invited with a catered menu. This event is also the award ceremony where we recognize graduating seniors, officer promotion, and season accomplishment recognition. Actual trophies and plaques are handed out. Our mentors and parent volunteers are also recognized. Seniors are also recognized at the season kickoff where they receive a personalized yard sign.

The Business Mentor has documented all the events and explained how and what needs to be done to accomplish the team's calendar. We save those documents on our team google drive. We have four founding mentors who train newer parent volunteers and mentors and students to prepare for the new school year and new FRC season.

## **VI. Team Funding and Budget**

### **Financial Management**

Team 5427 is a high school club financially supported by the associated Tompkins Robotics Booster Club which is a 501(c)3 organization. The booster club processes all the team invoices through QuickBooks and is a part of Parent Booster organization which provides income tax submission support.

### **Team Funding**

The largest fundraiser each year for Team 5427 is the membership drive at the beginning of each school year. The student activity fee has been increased slowly over time to \$200 for the school year. The fee covers the cost of two t-shirts per member, and it helps pay for the FIRST registration fees and part of the cost to build a new robot each season. Students who received free or reduced lunches are offered a reduced student activity fee. Our second largest fundraiser is the result of the two summer camps we hold at our robot build site. We raise over \$10,000 each summer hosting those camps for younger students. In addition, it is a great opportunity for our students to hone their leadership and training skills.

### **Ways We Fundraise**

- Membership Drive
- Summer Technology Camps
- Grants
- Corporate Sponsorship \$1,500 +
- Employer Matching Charity Funds
- Individual donations

### **Team Budget**

As a team, we are in our ninth year and our budget is based on paying for the FIRST registration fees and building a robot and potentially a prototype. Last year, our school district started paying for our State/UIIL competition fee since they pay for other school organizations UIL fees.

Currently, we are looking for funding to cover the cost of new technology for our Summer Camps that we use to help fund the team. This year we had a large purchase that was funded through a large sponsor donation to purchase a new CNC machine. We use it to manufacture our parts for the robot. We always try to raise more funds to replace equipment and to increase our outreach to teach stem classes to lower income students and support a child foster group with education and Lego kits that we donate to them.

### Estimated 2022-2023 Team Budget

<b>Estimated Income</b>	
Student fees (\$200 per student)	\$24,000
Sponsorship	8,000
Summer Camp Fundraising	12,000
Grants	\$2,000
District Funding of State competition	4,000
<b>Total Income Amount</b>	<b>\$50,000</b>

<b>Estimated Expenses</b>	
FIRST registration fees for District, State, Championship	\$15,000
Off-season registration fees	1,000
Team T-shirts (2 shirts per student)	4,200
Marketing Expenses	\$2,000
Equipment/tools/parts Cost	12,000
New CNC Machine	13,000
Robot Prototyping expenses	\$4,600
<b>Total Expenses Amount</b>	<b>\$50,000</b>