



# **Paly Robotics Team Handbook**

Revised 1/25/19



# Table of Contents

[Table of Contents](#)

[Introduction](#)

[Structure, Roles, Responsibilities](#)

[Decision Making](#)

[Joining the Team](#)

[Student Expectations](#)

[Lab Rules and Safety](#)

[Travel and Competitions](#)

[Authority of the Handbook](#)

[Appendices](#)



## Introduction

Welcome to Paly Robotics, also known as Team 8! This handbook describes how the team operates, key policies, and expectations.

### Mission

Paly Robotics is dedicated to enriching the educational experiences of our students and the community by increasing STEAM exposure and inspiring others through FIRST programs.

### What We Do

Paly Robotics participates in the FIRST Robotics Competition, also known as FRC. At the beginning of each calendar year, the team is given a little over six weeks to produce a fully functioning robot to play that year's FRC game challenge. The team then attends tournament-style regional competitions to compete for a spot at the Houston FIRST Championships in April. Paly Robotics is completely student driven, with team members also working to fundraise, apply for awards, and maintain a seamless team brand.

In addition to FRC, Paly Robotics has a number of initiatives to help spread robotics and STEAM to the greater community. The team runs an annual summer camp for incoming middle schoolers, and hosts several demos at local elementary and middle schools throughout the year. Team 8 is also constantly looking for opportunities to create and mentor new FIRST teams, both locally and internationally.

### Team History

Team 8 was founded in 1996 and has been participating in FIRST for over 20 years. What started as a 20 member club has since transformed into a team of over 70 dedicated students. Following a reboot in 2013 with the loss of the team's founding Head Coach, Paly Robotics has grown dramatically. There are opportunities for students to learn a variety of technical skills including mechanical design, programming, grant writing, and 3D animation, as well as practice critical communication and leadership skills. The team's recent performance has been quite strong in recent years, attending the FIRST World Championship in both 2016 and 2017.

## Structure, Roles, Responsibilities

It is important to have schematics of a complex machine, just as it is important to clearly define the structure of a large scale organization such as Team 8.



## Subteams

At the core of Team 8's structure are subteams. Subteams are a way to divide team members and a way to accomplish related tasks efficiently.

### **Build**

Build team is responsible for manufacturing all robot parts and taking a robot design from concept to reality. They must also work closely with Design team to iterate on and improve mechanisms. In addition, Build team is responsible for maintenance and upkeep of the robot to keep it operational and running smoothly.

### **Design**

Design team is responsible for taking a robot strategy and developing a robot design. They oversee the prototyping phase and coordinate the decision making with regards to mechanism selection. Design team is responsible for putting together a detailed CAD of the robot to be built and continually refining it as Build manufactures, assembles and tests.

### **Software**

Software team is responsible for defining an overall code layout and architecture, and developing the code to allow the robot to function. They are also responsible for testing and continually tweaking the code based on evolving needs, as well as communicating hardware failures and necessary improvements to Build and Design.

### **Business**

Business team is responsible for managing the corporate aspect of the team. They are in charge of organizing fundraising and sponsorships as well as applying for company grants. Business team also applies for awards at competition that showcase the team's outreach, impact in the community and diversity.

### **Art**

Art team is responsible for the creation of 3D animated shorts to submit to various animation competitions. They are also responsible for designing and maintaining team graphic design assets such as the logo, and creating materials such as t-shirts, flyers and banners.

With the exception of a few team members in certain leadership positions (e.g. Team Captain, Team Project Manager, etc.), everyone on the team is officially a member of one and only one subteam.



## Leadership Roles

A student driven team such as Team 8 requires certain student leadership roles to be filled to make sure that the team runs smoothly. Each of these roles are responsible for overseeing the completion of a specific set of tasks.

### **Team Captain**

The Team Captain's primary responsibility is to coordinate with the team leadership and make sure that everything runs smoothly. The Team Captain also has responsibilities such as presiding over team meetings, organizing recruitment, planning team events such as potlucks, making certain executive decisions and working closely with the Head Coach and other mentors.

### **Team Project Manager**

The Team Project Manager's main responsibility is to ensure that progress on all projects and tasks is tracked. They are in charge of making sure that the appropriate leadership are aware of the status of tasks in relation to any overall schedule. They are also in charge of making sure that necessary resource allocations are made by the appropriate leadership.

### **Subteam Captain**

A Subteam Captain's responsibility is to oversee everything happening within their specific subteam. They must also make certain subteam specific executive decisions. Subteam Captains are responsible for coordinating with other leadership regarding cross-subteam cooperation, as well as generally looking out for team members who are a part of their subteam.

### **Lab Manager**

The Lab Manager is in charge of facilities and supplies for the team to make sure the lab can be used as efficiently as possible. They oversee the state of the lab and all of the rooms that the team uses, as well as coordinate purchasing and replenishing of any necessary items that the team needs. The Lab Manager also enforces policy related to [Lab Rules and Safety](#).

### **Competition Manager**

The Competition Manager is responsible for organizing all competitions that the team attends, and is in charge of logistics during the competitions as well.

### **Treasurer**

The Treasurer is responsible for keeping track of the budget; making purchases and reimbursements; and communicating with team leadership, Boosters, and Business team about spending, income and budget revisions.



### **Webmaster**

The Webmaster is responsible for working with the rest of the leadership to obtain new content for the website and keep it up to date.

The roles described above are the minimum needed for the team to function. From year to year, new positions may be added or some of the above roles may be split into more than one position. For example, a Pit Manager position was created to split the responsibilities of the Lab Manager role. The current leadership structure is described in [Appendix A: Leadership Structure](#) and updated annually.

### **Leadership Selection**

Leadership selection occurs following the conclusion of the competition season. While the process varies significantly from year to year, it tends to follow a top-down approach. The team's upper leadership is decided first, followed by subteam captains, and finally manager roles. Most often, applicants fill out an application form, there is a nomination form sent out to the entire team, and groups of students present organized recommendations to the Head Coach. The Head Coach then makes final decisions prior to or at the beginning of the summer.

### **Other Team Entities**

Additional entities may exist on the team at any given time to complete tasks that a subteam is not explicitly responsible for.

#### **Committees**

Committees are formed to investigate or execute a specific short term item such as attending an event, setting up a service, or similar. They generally consist of a few members and are intended to report back to leadership meetings to make more informed decisions.

#### **Initiatives**

Initiatives are longer term projects that may take more resources such as organizing a summer camp or creating a FLL team. They may consist of numerous team members and make significant decisions outside of team meetings, but should still report back to meetings with information and updates to make major decisions.

#### **Special Operations**

Special Operations are groups that are loosely affiliated with Paly Robotics, and may involve students not on the team. They operate largely independent of Paly Robotics, only give status updates at team meetings, and are generally not under the jurisdiction of team leadership.



## Head Coach

The Head Coach is the PAUSD employee in charge of everything that happens on Paly Robotics. Simply put, the Head Coach has the authority to make any final decisions related to the team when necessary. However, to keep with the student-driven philosophy of Team 8, it is advisable for the Head Coach to defer to the students in as many matters as possible. The Head Coach should provide guidance to students on how to facilitate good decision making, rather than make the decisions themselves. That said, when emotional health or safety are of concern, a stronger directive is appropriate.

The role of the Head Coach also includes managing confidential information of team members, which can often have implications that other students do not understand. The Head Coach must communicate these implications to the team leadership to manage expectations accordingly. As an example of confidential information, a team member may not be able to meet physical attendance expectations because of parents going through a divorce at home.

Additionally, the Head Coach is responsible for ensuring the team maintains a positive atmosphere that is inclusive and tolerant of all students. The team leadership and Head Coach should work together to identify and work to resolve conflicts between team members that are creating a negative environment and hindering team productivity.

## Mentors

Mentors are also an important aspect of Team 8, volunteering their time to help teach students new skills and guide their projects. With a student-driven philosophy, however sometimes it can be hard for mentors to engage with the team.

Mentors are encouraged to keep up with what students are working on and should not be hesitant to offer advice when they see an opportunity. Students sometimes attack problems from a single point of view, and having someone with a different outlook on the problem propose ideas can be extremely helpful.

When making tough decisions or facing obstacles, students should reach out to mentors. Mentors usually have several years of experience under their belt and can bring new ideas to the table. In the end, students must be accountable for their own decisions and face the consequences, but a guiding hand from mentors can often go a long way.

## Boosters

The Paly Robotics Boosters Club is an independent 501(c)3 organization to support Paly Robotics. Boosters members volunteer their time to make sure Paly Robotics is financially



sustainable and operating with adult support. The Boosters manage the team's bank accounts and work closely with the Business team, student Treasurer, and student leaders. The Boosters board holds monthly board meetings which are open to all Paly Robotics parents.

## Decision Making

### Leadership Meetings

Leadership meetings take place weekly (sometimes bi-weekly during the off-season) at 7:30pm on Mondays. All team members and mentors are welcome to attend. Meeting minutes are published the following day.

Agenda items for the meeting are to be sent to the Team Captain, who produces the agenda. Generally, the Team Captain should put all requested items on the agenda.

Leadership meetings are primarily to make decisions that impact or pull resources from more than a single section of the team. Decisions are made following a basic adoption of Robert's Rules of Order. An overview of leadership meeting procedures is as follows:

#### **Notetaker**

At the beginning of the meeting, a notetaker should be established to record notes and produce the meeting minutes.

#### **Approval of Previous Meeting Minutes**

The first order of business is to approve the previous meetings minutes. During this time, attendees may ask for clarification to the minutes or propose corrections.

#### **Updates**

Each section of the team should provide an update including progress and decisions since the last meeting, as well as future plans between the current meeting and the next meeting.

#### **Agenda Items**

Ideally, each agenda item has an associated motion, or at minimum a clear discussion topic such that a motion may result from the discussion. A motion requires a second for further consideration and deliberation. Motions may be amended, and require a majority vote (excluding abstentions) to pass.

#### **Lab Hours**

Lab hours until the next meeting are announced and attendees may move to add or modify the stated hours.





### **Additional Business**

Before the conclusion of the meeting, attendees may move to consider additional business not listed on the agenda. Consideration of additional business requires a two-thirds majority vote.

## **Joining the Team**

Any student currently attending Palo Alto High School is eligible to apply to Team 8. However, over the years, Paly Robotics has become a popular program with more applicants than can effectively and safely be accommodated. Within Paly Robotics, there is a limited amount of space, time to train students, and work to be done, meaning that unfortunately, like many other school sports teams, not all students that apply are accepted. Every effort is made to ensure that recruitment is fair and all applicants are given an equal opportunity.

### **Recruitment**

The recruitment phase begins in September and lasts for about a month. During this time, students interested in joining Paly Robotics learn about the different opportunities available and try out for a specific subteam. The team leadership evaluates applicants and provides recommendations to the Head Coach. The Head Coach determines the final roster and may make changes after processing leadership input before it is posted outside of the robotics lab in early October.

During this time, demonstrating prior knowledge and experience are secondary to commitment, enthusiasm, and ability to collaborate well with others. Although the bar of entry may seem high, the goal is not to discourage those who may be new or inexperienced to robotics. Instead, the team looks to find those who are dedicated and passionate enough to stick with the team and make it an integral part of their high school experience.

### **Veteran Members**

Veteran members are either listed as returning or reapplying members.

#### **Returning Members**

Returning members have shown a high level of commitment, remaining active within their subteam and taking initiative to support the community through other avenues as well. These students are identified by captains, and recommendation lists are submitted to the Head Coach, who produces the final returning member roster.



### **Reapplying Members**

Reapplying members are veteran members interested in continuing with the team next year, but not on the returning member roster. These members are strongly encouraged to submit applications during recruitment and will be evaluated alongside the other applicants.

For veteran members looking to transfer subteams, a transfer can be requested prior to the beginning of the recruitment phase. Generally, if a team member wishes to transfer subteams, they must reapply to the subteam they are looking to join with no guarantee of acceptance.

## **Student Expectations**

Paly Robotics is not just an afterschool club, but rather an extracurricular that demands commitment more comparable to a sports team. Described below are the expectations of the typical team member. However, expectations depend on the specific needs and abilities of each student. No one should rule themselves ineligible from the team when despite their very best effort they are unable to meet the expectations below. For example, a student whose home situation makes it so they can only attend one day per week, or a student who is managing the challenges of depression, autism, or a concussion should not assume that these situations preclude them from participating. All of these and more have been handled before, and doing so represents the fulfilment of the team mission.

### **Meetings**

Students are expected to regularly attend Thursday team meetings. These take place 10 minutes after the end of school on Thursdays, which is usually at 2:45pm. While not required, all students are welcome to attend Monday leadership meetings as well.

In addition to teamwide meetings, subteams may also have weekly meetings or similar. Team members are expected to attend subteam meetings on a regular basis and participate in their subteam's work.

### **Communication**

All students will be registered on Slack, the team's primary communication platform. Students should check Slack at least daily, and are expected to respond to messages within 24 hours.

Students should also keep their subteam captain updated on special circumstances, such as traveling for multiple weeks, absences due to illness, beginning a sport that conflicts with robotics, etc.



Slack is managed by the team leadership. With this freedom comes a responsibility for students to behave appropriately. Administrator privileges will be granted and revoked at the discretion of the Team Captain and/or Head Coach only.

## Behavior

Students are expected to follow all Paly rules and laws regarding conduct and behavior. Students should act professionally, courteously, and focus on supporting teammates rather than bringing others down.

If behavior problems arise, consequences will be determined by the Head Coach and scale with severity and frequency. Possible consequences include being sent home, placed on suspension from the lab, or removal from the team entirely. More serious offenses may be handled by the Paly administration or law enforcement officials. See [Consequences](#) below for more details.

## Attendance

Paly Robotics requires year-round commitment, similar to the level of a varsity sports team. Robotics gives back as much as is put in, and students that do not meet participation expectations will not enjoy the full experience.

### **Off Season (September to December)**

The lab will be open about 10-15 hours a week, usually Thursday after school and both Saturday and Sunday afternoon. Everyone is expected to put at least 6 hours per week of work into robotics.

### **Build Season (January to Mid February)**

The lab will be open every day of the week, which adds up to about 35 hours each week. Over the course of build season, team members are expected to work at least 100 hours total (15 hours per week). Many members end up approaching double that number.

### **Competition Season (Mid February to April)**

Lab hours are usually similar to off-season with one or two weekdays added. The expectation is 10 hours per week of work.

### **Summer Break (May to August)**

There is no official participation expectation during the summer; however, the lab is usually open one or two weekday evenings and both weekend afternoons.



## Outreach

All members are expected to continuously help out with outreach initiatives throughout the year. These include but are not limited to: summer camp, local demos, and helping FTC and FLL teams. One of the criteria when evaluating an individual's commitment will be their participation in outreach initiatives.

## Consequences

If team leadership notices that a member is not meeting the requirements outlined above (i.e. not checking Slack daily, not completing assigned subteam work, neglecting to meet lab hour expectations in the long-term and not communicating with team leadership), the student will be contacted by members of the team leadership to discuss the issue.

If problems persist and the failure to meet above expectations continues, it will affect the student's Slack status, eligibility to attend competitions and place as a returning or reapplying member. A student who continues not to meet expectations or participate in Paly Robotics can be removed from the team at any point in the year at the discretion of the Head Coach. Once removed from the team, Slack access will also be revoked. See [Travel and Competitions](#) and [Joining the Team](#) for additional information about how participation can affect competition eligibility and membership.

## Team Leadership Expectations

Team leads are expected to fulfill their role and responsibilities as described in [Appendix A: Leadership Structure](#). Additionally, they should regularly check Slack throughout the day and promptly respond to messages. Team leads are also expected to attend Monday leadership meetings regularly and provide weekly updates.

If individual team leads are not fulfilling their responsibilities, their role may be reassigned at the discretion of the Head Coach after discussion with the Team Captain and applicable team leadership.

## **Lab Rules and Safety**

Paly Robotics has access to a full machine shop, computer lab and practice field, located in the 900s building on the Paly campus. However, there are certain rules that must be followed when using these facilities to ensure productivity and safety:

- No student is allowed to work in any robotics facilities unless a district-approved supervisor is on campus and actively supervising the team..



- An adult supervisor must be present in any room or space that is being used by students.
- Students must put on safety glasses, wear closed-toed shoes, tie back long hair, remove wrist garments, roll up long sleeves, and tuck in drawstrings while in the machine shop or operating power tools.
- Students not certified to use machinery may not operate it without supervision from a certified team member or mentor.
- If machinery malfunctions, it must be reported to a mentor and clearly marked as out of commission until the problem is resolved.
- All injuries should be reported to the supervising adult, no matter how minor.
- The supervising adult has the final call in all matters related to safety.
- The last 15 minutes of lab hours are dedicated to clean up. Students may not continue to operate machinery, tools or robots during this time, and must focus on clearing out of the lab so it can be shut promptly at the end of lab hours.
- Food and drinks are allowed in the common areas of room 903 and 904. Food may not be taken into the machine shop, computer lab, or practice field.
- Students should participate in robotics related activities or quietly work on schoolwork while at the lab. Students fooling around or playing games for an extended period of time will be asked to get back to work or leave the lab.
- All Paly rules and government laws apply during Paly Robotics lab hours.

## Travel and Competitions

Competitions are one of the highlights of Paly Robotics. Usually, the team attends two official competitions in March, and potentially FIRST Championship in late April depending on performance. Additionally, the team attends one or two off-season competitions in the fall.

### Eligibility

All team members that meet the requirements outlined in the [Student Expectations](#) section are eligible to attend competitions. In the case that there is a limit on how many students can attend, the Head Coach will determine the travel roster, prioritizing students who fill key roles and looking at factors such as seniority and commitment. Generally there is an attendance fee for each competition, but scholarships are available.

### Local Competitions

Local competitions are within reasonable driving distance such that students return home each night, and are classified as PAUSD day field trips. Generally, parent driver carpools are



organized for transportation. Students may not drive themselves to local competitions unless with prior written parent approval, and students absolutely may not drive other students.

### Overnight Competitions

Overnight competitions are distant enough that the team stays at a local hotel, and are classified as PAUSD overnight field trips. If within reasonable driving distance, the team may take a bus to these competitions, otherwise flights are organized. Parent chaperones also come on the trip as additional supervision. Students may not transport themselves to and from these competitions alone.

### Additional Competition Expectations

Students are required to abide by all Paly rules and laws while at competitions. In addition to the team behavioral expectations, students at competition are expected to participate and make the most out of their experience. Students should not attend competition with the intention of just fooling around and missing school. Students not meeting expectations may be sent home early or banned from the remainder of the competition.

## **Authority of the Handbook**

The rules and policies set forth in this handbook are binding and must be respected by all individuals affiliated with the team. This handbook may be modified by the team leadership at any time by means of a two-thirds majority vote at a leadership meeting.



## Appendices

### Appendix A: Current Leadership Structure

This section is updated annually following the conclusion of the leadership selection process. Outlined below are the leadership positions and associated responsibilities for the 2018-2019 year.

#### **Team Co-Captains**

The two Team Co-Captains share the responsibility of Team Captain.. They are responsible for presiding over team meetings, organizing recruitment, planning team events such as potlucks, making certain executive decisions, and working closely with the Head Coach and other mentors. One of the Team Co-Captains focuses on robot-related technical progress and coordination, especially during build season, while the other Team Co-Captain provides management and guidance for fundraising, outreach, and other non-technical tasks. In terms of executive decisions, each Co-Captain's area of focus determines where they generally have the final say, and this is usually split between robot-related technical and non-technical decisions. Under the circumstances that the two Co-Captains disagree on a decision, the decision shall include a tiebreaking party depending on the situation (eg: a robot decision may include the Build, Software and Design Captains as a tiebreaker, while a sponsorship decision may include the Business captain as the tiebreaker).

#### **Team Project Manager**

The Team Project Manager's main responsibility is to ensure that progress on all robot-related technical projects and tasks is tracked. They are in charge of making sure that the appropriate leadership are aware of the status of tasks in relation to any overall schedule, calling meetings to reschedule and reorganize tasks. They are also in charge of making sure that necessary resource allocations are made by the appropriate leadership.

#### **Subteam Captains**

A Subteam Captain's responsibility is to oversee everything happening within their specific subteam. They must also make certain subteam specific executive decisions. Subteam Captains are responsible for coordinating with other leadership regarding cross-subteam cooperation, as well as generally looking out for team members who are a part of their subteam.



### **Design Manager**

The Design Manager is a secondary lead on Design team, providing additional efficiency in delegation, organization, and communication, especially focused on CAD, and acts as a second-in-command when the Design Captain is unavailable.

### **Build Manager**

The Build Manager is a secondary lead on Build team more focused on delegation, organization, and communication in regards to underclassmen, especially freshmen. Their main responsibilities include teaching underclassmen necessary skills, and helping build team culture to improve and thrive.

### **Electronics Lead**

The Electronics Lead is in charge of electronics on the robot. They, along with Build team leadership, decide which members will specialize in the electronics pathway and work on electronics on the robot. The Electronics Lead has the responsibility of teaching new members about electronics and especially focusing on passing knowledge to new members to the electronics pathway.

### **Art Project Manager**

The Art Project Manager is a secondary lead on Art team, providing organization and scheduling for Art team in regards to their projects and assignments. They are also responsible for communicating to the Art Captain about progress and deadlines as they approach, and rescheduling if necessary. The Art Project Manager functions as the second-in-command when the Art Captain is unavailable.

### **Lab Manager**

The Lab Manager is in charge of facilities and supplies for the team to make sure the lab can be used as efficiently as possible. They oversee the state of the lab and all of the rooms that the team uses, as well as coordinate purchasing and replenishing of any necessary items that the team needs. The Lab Manager also enforces policy related to [Lab Rules and Safety](#).

### **Pit Manager/Safety Captain**

The Pit Manager is in charge of preparation of the pit for competitions, including purchasing tools and equipment as well as organizing transportation for pit supplies. They regulate the pit supplies during the season, making sure items are not lost or misused. The Pit Manager also doubles as the Safety Captain, enforcing safety rules for the team both in the lab and at competitions.

### **Competition Manager**

The Competition Manager is responsible for organizing all competitions that the team attends, and is in charge of logistics during the competitions as well.





### **Treasurer**

The Treasurer is responsible for keeping track of the budget; making purchases and reimbursements; and communicating with team leadership, Boosters, and Business team about spending, income and budget revisions.

### **Strategy and Scouting Leads**

The Strategy and Scouting Leads are responsible for strategy (match strategy at competition and picklist creation) and scouting (scouting application creation and scouting organization at competition), as well as managing any other related tasks.

### **Webmasters**

The Webmasters are responsible for working with the rest of the leadership to obtain new content for the website and keep it up to date.