

POWER HAWKS ROBOTICS TEAM HANDBOOK



FRC TEAM 1111

FTC Team 3583, 3796, 5178

This handbook is intended to give you an understanding of the Power Hawks Robotics Team and the responsibilities of its members, including students, parents, and mentors. In the following pages you'll find information relating to the team overview , expectations, key roles, procedures, and many other aspects of the team.

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Table of Contents

Introduction.....	4
Mission.....	4
Values	4
FIRST Values.....	5
Team Overview.....	6
What do we do?	6
Why?	6
What are the basics?.....	6
What do team members do?.....	6
What's in it for you?	6
History.....	7
Qualifications	8
Team Organization.....	10
Selection Process	11
Expectations.....	13
Member Expectations	13
Failure to Adhere to Expectations.....	16
Key Roles.....	17
Parents/ Guardians	17
Teacher & Coaches Roles/ Responsibilities	18
Mentors	18
Leadership.....	20
Procedures.....	25
Fundraising	25
Meeting Procedures	25
Travel Procedures	27
Competition Procedures.....	28
Hotel Procedures	32

College and Career Opportunities.....	33
Scholarships	33
Engineering Opportunities	33
Resume and College Essay Help	33
Letters of Recommendation	33
Contact Information	34
Social Media	34
Communications Contact.....	34
Resources	34
Acknowledgements	35
Signature of Understanding	36

List of Figures

Figure 1 Team Organization	10
Figure 2: Student Executive Leadership Team	21
Figure 3: Student Leadership Team	22

Introduction

Welcome to the Power Hawks Robotics Team! This team handbook is a guide for you so that you have an understanding of what the Power Hawks do and what is expected of you. While this handbook is primarily written for students, there are sections for parents and mentors as well. It would be a good idea to read all sections as a parent or mentor so you are familiar with the team's policies.

Mission

The Power Hawks Robotics Team's mission is to prepare individuals to be contributing members of society through the experiences of cooperation and competitive robotics programs and year round community outreach.

Values

The Power Hawks Robotics Team's members display the following values in everything they do:

Responsibility

Students are responsible for their actions and should always make decisions that lead to the betterment of themselves and others.

Respectfulness

Students are respectful of those around them, and are always working to help each other and those less fortunate.

Engagement

Students are engaged in their classes, extracurricular programs, home life, and community to help better our world.

Teamwork

Students work as a team, helping each other to achieve and are ready and willing to work together to overcome any obstacle.

Leadership

Students work to be leaders, both within themselves and in their community in order to make our world a better place.

Integrity

Students show integrity through honesty and display a commitment and dedication to helping others.

Safety

Students will always use safe practices in whatever they do to protect themselves and those around them.

FIRST Values

In addition to our team's values, the Power Hawks Robotics Team's students display the values of FIRST in everything they do:

Taken directly from FIRST (<http://www.usfirst.org/aboutus/gracious-professionalism>)

Gracious Professionalism

Dr. Woodie Flowers, *FIRST* National Advisor and Pappalardo Professor Emeritus of Mechanical Engineering, Massachusetts Institute of Technology, coined the term "Gracious Professionalism®." Gracious Professionalism is part of the ethos of *FIRST*. It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.

With Gracious Professionalism, fierce competition and mutual gain are not separate notions. Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process. They avoid treating anyone like losers. No chest thumping tough talk, but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended.

In the long run, Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.

Coopertition

Coopertition® produces innovation. At *FIRST*, Coopertition is displaying unqualified kindness and respect in the face of fierce competition. Coopertition is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete.

Coopertition involves learning from teammates. It is teaching teammates. It is learning from Mentors. And it is managing and being managed. Coopertition means competing always, but assisting and enabling others when you can.

Team Overview

What do we do?

The Power Hawks compete in FIRST Robotics Competition, a worldwide competition where teams build a robot for a game that completely changes every year. But its way more than the robot – our team operates like a business, giving our students real world experiences while developing into a close nit family.

Why?

First and foremost, it's fun! You'll make lifelong friendships and have the opportunity to get well ahead of your peers who aren't in robotics. You can learn technical skills, business skills, or both! Most importantly though, you'll learn about teamwork, leadership, respect, and integrity, and develop into an amazing individual who can go out and change the world.

What are the basics?

The Power Hawks works with industry professionals to teach and inspire our team. During the fall FTC has their Build season, the FRC do a lot of workshops and training opportunities, in addition to outreach events. In the winter, we have the FRC “build season” where we have just six weeks to design, build, test, and troubleshoot a 120 pound robot. Then in the spring, we compete with the robot and show off our team to the world. During the summer, we do outreach and fundraising activities as well.

What do team members do?

They run the team! While the teams have coaches and have adults helping to lead it, the majority of the team is run by you, the student. Therefore, you can help build or program a robot, or help out with prototyping new ideas. You can also help with our FRC business team, which does everything from maintaining our budgets, to managing and exploring community service, fundraising, and demo events, to designing the graphics for the teams, and even running our social media and website.

What's in it for you?

You'll get hands-on learning from people working in the real world. You'll make connections with businesses that may help you in college and beyond. You'll get opportunities at multiple colleges who are looking for students like you. You'll have access to over \$15 million in scholarship money exclusively for students who participate in FIRST Robotics. Above all, you make lifelong friendships and have a lot of fun!

POWER HAWKS ROBOTICS

History

The Power Hawks Robotics FRC Team 1111 was founded in 2003 by Mr. John Jacobson, a physics teacher at South River High School, and eight students. Each year since the team has grown both in members and in abilities. In 2009 we started the FTC teams 3583 & 3796 and in 2010 we added one more FTC team 5178. Currently, the Power Hawks main focus is to inspire our community through multiple outreach efforts in partnership with our funding arm, the Power Hawks Robotics Club, Inc.

Awards Won

The Power Hawks are proud of the awards won over the years as they help to recognize the hard work we do towards bettering our community.

FRC Awards Won

2014 Awards

North Carolina Regional	Raleigh, NC	Regional Finalists Entrepreneurship Award
Chesapeake Regional	College Park, MD	Imagery Award

2013 Awards

Finger Lakes Regional	Rochester, NY	Engineering Inspiration
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2012 Awards

Chesapeake Regional	Baltimore, MD	Judges' Award
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2011 Awards

Chesapeake Regional	Baltimore, MD	Excellence in Design
Virginia Regional	Richmond, VA	Judges' Award

2010 Awards

Washington DC Regional	Washington, DC	Engineering Inspiration
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2009 Awards

Chesapeake Regional	Annapolis, MD	Creativity Award Team Spirit
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2008 Awards

Chesapeake Regional	Annapolis, MD	Regional Finalists Innovation in Control
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2007 Awards

Chesapeake Regional	Annapolis, MD	Sportsmanship
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FTC Awards Won

2012 - 2013 Awards

Capital Collage Qualifier	Beltsville, MD	Team 5178	Inspire Award
		Team 3796	Think Award
Naval Academy Qualifier	Annapolis, MD	Team 3583	Connect Award
		Team 5178	Motivate Award

2011 - 2012 Awards

Collage of Southern	La Plata, MD	Team 3583	Motivate Award
Maryland Qualifier		Team 3796	Think Award
		Teams 3583, 3796 & 5178	Judges Award
Naval Academy Qualifier	Annapolis, MD	Team 3796	Connect Award
Maryland State Championship	Laurel, MD	Team 5178	Finalist Alliance Award
		Team 3583	Judges Award
		Coach Kathy Kelly	Compass Award

2010 - 2011 Awards

Maryland State Championship	La Plata, MD	Team 3583	Spirit Award
York Pennsylvania Qualifier	York, PA	Team 3796	Inspire Award

Qualifications

A student on the Power Hawks Robotics would portray the following qualities:

Grade Point Average

A student must have a grade point average of at least 2.5 weighted upon being selected to the Power Hawks Robotics Team. Additionally, students must maintain a 2.5 GPA each marking period and semester. During the course of the competition season, team activities will comprise of a large portion of students free time. A strong ethic in study habits and a history of achievement or desire for achievement is therefore essential in maintaining and improving a student's academic progress in the classroom.

Demonstration of Positive Learning Habits

Positive learning habits are related to study skills, classroom assignments, grades, classroom, and school improvement. A student's current grades and past achievements, as well as demonstrated ethics are powerful statements about their learning habits. A team member is making an effort in their school work in addition to their team work.

Good Attendance, Punctuality, and Dependability

Attendance and punctuality are indicators of a student's commitment to their education and future. A team member needs to be available and ready to participate as much as possible. When asked to participate, establishing a record of dependability and punctuality is essential to team organization and efficiency. For our attendance policy, please see the [Minimum Requirements](#) section under Procedures.

Consistent Demonstration of Being Responsible, Respectful, and Engaged

Each team member is an ambassador of our team. Team members need to be role models for other students to emulate and respect. Solid behavior choices should be demonstrated at all times, in and out of school activities.

Ability to Commit to a Project

Starting a project and following it through to the end is critical to team performance. Team members need to dedicate themselves and not get side tracked or discouraged.

Ability to Work Both Independently and as a Team Member

Being able to be a team player, doing what is needed for the team is an asset to all. However, working independently with little or no direction shows dedication and willingness to learn.

Demonstration of Honesty and Integrity

A person of good character consistently demonstrates honesty and integrity in their personal, academic, and work lives.

Acceptance of Failure as a Tool for Learning

Many successful people fail quite often, but then learn from the mistakes made and move forward, taking their failure in stride. A team member who has this ability can go far in the team and beyond.

Team Organization

The Power Hawks Organization is broken into a number of different programs as shown in the figure below.

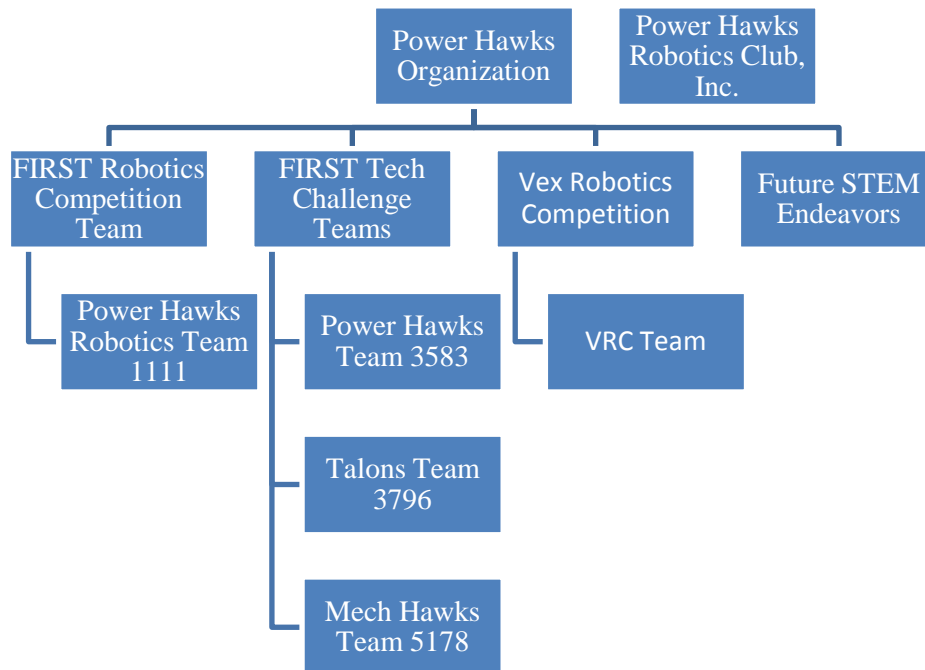


Figure 1 Team Organization

Power Hawks Organization

The Power Hawks Organization is the school program that makes up all school activities in the organization. While most of the teams under the Power Hawks Organization largely operate on their own, The Power Hawks Organization runs large events that span all programs such as our annual FIRST Lego League Qualifier, fundraisers in the school, and community service projects. It is run by the leaders or captains of each program under its control.

The Power Hawks Organization's purpose is to create unity in the organization when completing large projects.

Power Hawks Robotics Club, Inc.

The Power Hawks Robotics Club, Inc. is a 501(c)(3) nonprofit run by parents and community members. It is not associated in any way with Anne Arundel County Public Schools or South River High School. The goal of the nonprofit organization is to provide funding opportunities to help STEM and Robotics programs throughout Anne Arundel County. It is the primary monetary mechanism for the Power Hawks Organization, providing the majority of the organization's funding and materials. While separate from the Power Hawks Organization, The Power Hawks Robotics Club, Inc. works closely with the programs under the Organization to ensure both missions are being met. Further, The Power Hawks Organization often volunteers for the

POWER HAWKS ROBOTICS

nonprofit's fundraisers and community service projects, providing volunteers and services to help the club in its endeavors.

FIRST Robotics Competition Team

Our FIRST Robotics Competition (FRC) Team is considered the pinnacle of the Power Hawks Organization. The Power Hawks Organization fields one team—Team 1111, the Power Hawks, which competes yearly in the FIRST Robotics Competition.

FIRST Tech Challenge Teams

Our FIRST Tech Challenge (FTC) Teams are considered our starter teams. They help students get acclimated with robotics and allow students who have other major time commitments still participate. The Power Hawks Organization fields three FIRST Tech Challenge teams;

- Team 3583—Power Hawks
- Team 3796—The Talons
- Team 5178—Mech Hawks

Vex Robotics Competition Team

Our Vex Robotics Competition (VRC) Team is designed for students who want to participate in a rigorous robotics program but cannot be a part of FRC or FTC due to the late meeting times of the two. VRC is intended to run after school in relation to the STEM Late Busses for those students. The Power Hawks Organization fields one team, which competes yearly in the Vex Robotics Competition

Future STEM Endeavors

The Power Hawks Organization is continuing to look for other ways to further inspire more students. Currently though we do not have the adult mentors to run the teams. If you are interested or may be interested in starting another program under the Power Hawks Organization, Please contact the Head Mentor. Programs may include;

- Technology Student Association (TSA)
- Other STEM co-curricular programs

Selection Process

There is a selection process for joining the Power Hawks. This process starts with the student completing an application. Each year, dates will be set on when applications are to be turned in. This process starts in the winter/spring with the selection of leadership. This will be done through interviews and applications. Selected executive leadership and leadership students will shadow students they are replacing for the rest of the year to learn their roles. Once leadership is selected applications will be sent out and an application night will be held for FRC and FTC

students who are new to the team. Selecting a team is an extremely difficult task for the leadership and mentors. While being a member of the team the previous year gives you a good expectation to be on the team the next year, it is in no way a guarantee.

FRC Executive Leadership Selection

Towards the end of build season the current Executive Leadership Team and head mentor will work to select the following year's Executive Leadership Team. This is done so that the new Executive Leadership Team can both learn directly from the current leaders and so that they can have a role in the selection of the team that they will be running the next year. The current Executive Leadership Team will create an application for all current members who are interested, conduct interviews, speak with mentors, and make the decision of Chief Executive Officer and Vice Executive Officer. Those two individuals, along with the current leadership team, will then choose the Business and Build Operations Officers to ensure student compatibility.

FRC Leadership Position Selection

The process starts with current members submitting applications and mentors submitting reports on the students. All applications from current members are due on or before the published date and time advertised. Late applications will not be accepted.

Once applications are handed in the current Chief Executive Officer and Head Mentor will review the applications and interview every student. A review is also conducted of the student's grades.

The Chief Executive Officer and Head Mentor, along with input from the mentors and the next year's Executive Leadership Team will then select the students for the leadership positions to be filled for the following year. If a current leader is on the team for the next year, their position is not guaranteed and they must reapply just as other students would.

Prospective New Students

The application process will be started as soon as the current member application process is completed for both FRC and FTC. The team will advertise throughout the school and surrounding middle schools, and hold a night meeting where prospective students will be given the opportunity to show off their abilities and potentials. Once finished, the new Executive Leadership Team will make decisions on where students may be placed, either FTC or FRC. These decisions will then be emailed out to both new students and new parents.

It may be possible that we cannot take every student who applies. If this is the case we highly recommend that students apply to our FIRST Tech Challenge Teams.

All students, new and returning, will then be expected to attend an orientation meeting to get to know each other and the team as a whole.

Expectations

There are key expectations that you will be held to as a member of the Power Hawks. It is imperative that you follow all of the following expectations at all times.

Member Expectations

School

Success in class is an important aspect of the Power Hawks. Team members are successful only when they succeed in the classroom, and then participate in team activities. Therefore, all team members are expected to make school work and academic performance a priority over any team event or activity. This does not mean that students are permitted to miss many team events and meetings though in order to do school work. Students are expected to manage their time appropriately in order to be successful both in school and on the team.

To implement this, every student will maintain eligibility through both school policies and team policies. Students will therefore be expected to maintain a minimum 2.5 GPA in order to maintain their position on the Power Hawks. If a student does not maintain that GPA they will be placed on probation. They will be assigned tutoring services to help them get their grades up and they may be assigned other services to help them (help with organization, for instance). They will be expected to show grade improvement within one marking period or they may face removal from the team.

The key is to discuss concerns with school work with the Head Mentor as soon as possible to ensure your continued success both academically and on the team.

Any student who is struggling with school is strongly encouraged to seek help. Team members will gladly help tutor you to ensure success and you will not be looked down on for doing so. For that reason, please ask if you need help!

Events

Events like competitions are key parts of the robotics program. This is one area where gracious professionalism and our other team values come into play and are extremely visible to everyone. All eyes are on you every minute you are in public. Your behavior is a direct reflection on your character and on our team. A judge or member of another team may overhear what you say to one another and how you say it. Even the expressions on your face and body language may bring unwanted negative attention and bad impressions.

We are a very close family when we travel and conflicts may arise as a result. Students must refrain from rumors, he-said-she-said, and negative comments about one another. If a problem arises with another student you are requested to speak to the Head Mentor immediately. Students are not allowed to have physical conflicts with each other. If a problem such as this arises, both students will be disciplined as per school rules, which may include being sent home at your parents' expense.

Volunteerism

Community service and volunteerism is central to the mission of the Power Hawks Robotics Team. Members are expected to volunteer for a number of hours each year as part of their membership in STEM and robotics related outreach areas in order to help our community grow and prosper. To ensure students volunteer, a minimum number of volunteer hours is required each year in order to participate at regional and championship events.

Cooperation

Students are requested to cooperate at all times. This means that if a mentor or captain makes a request, you will comply with the request to the best of your ability. Ignoring directions or requests of a mentor or captain is not in the team's best interest. If you feel a request is out of order, you are encouraged to respectfully talk it through with the captain or mentor making the request. You also have the option to speak with the Head Mentor or Chief Executive Officer.

Behavior

Students are expected to behave responsibly at all times. This means that students will not partake in the following behaviors, among others:

Running in hallways, pushing and shoving, name calling (negative), making messes, fighting, swearing, stealing, and all other activities that reflect negatively on you and the team

Team Image

You as a member of the Power Hawks represent not only yourself but the team as a whole.

Therefore you are expected to act responsible, respectful, and engaged at all times.

Additionally, our "brand" is incredibly important to our continued image. Thus, any published material or anything that may be seen by the public must be appropriate at all times and must follow all rules set by the team's Identity Standards Document. If you have any questions, please ask the FRC graphics captain or mentor for help.

Uniform

Our uniform is an important part of our image and brand and thus must be maintained with dignity and care. There are several parts to our uniform that may be worn in several combinations.

The team uniform consists of a team T-shirt and khaki pants or shorts of an appropriate length. Underwear shall not be seen at any point. Further, no manipulation of the team shirts may be made.

FIRST or team hats are allowed and encouraged. Other hats may be approved on a case by case basis by the Head Mentor.

Power Hawks outerwear is encouraged but not required. If you do not have Power Hawks or FIRST outerwear your outerwear must be respectful and not have any large logos or sayings on it. Outerwear will not be permitted at any time in the Pits at competition.

Closed toed shoes and Power Hawks safety glasses are required at all competitions and while building the robot. Long hair must be tied back at all times when safety glasses are required.

The care and cleaning of the uniform is the students' responsibility and it is expected to be appropriately maintained at all times.

Game Playing

While students are encouraged to play social games outside of team time, it is unacceptable to play any sort of game during team meetings or events. This includes 30 minutes before any meeting, during any meeting, any event, fundraiser, outreach event, or competition. In the event that you are found to be playing any sort of board, card, video, or other type of game, the game will be confiscated and will be given to your parent. Additionally, if you continue to violate this policy your standing on the team may be compromised. You represent our community, school, and team wherever you go. By playing games at an event instead of helping, you are portraying a negative image on both yourself and the rest of the team.

Relationships

In the event that a relationship develops or is ongoing, there are certain guidelines that must be adhered to at all times when engaged in team activities. Competitions and team events are also not the time nor the place to pursue new personal relationships beyond friendship.

Handholding, extensive hugging, kissing, and other public displays of affection are strictly prohibited at all times. Couples may not wander off or sit alone. In other words, they should not appear as a couple but as part of the team. Common sense should prevail at all times.

Communication

Students are required to have an email address and check it daily. They should read all emails from robotics members carefully and completely. Great care should be given to your email address when you create it. Cute game related or nickname emails are often looked at in a negative manner by employers. All email correspondence should be formal as well. Emails should include a subject, salutation, proper grammar, and signature. Make sure to read all emails before sending and look for professionalism. For tips in writing emails, visit <http://writingcenter.unc.edu/handouts/effective-e-mail-communication/>. In addition, students should frequently check the team website, including the calendar and the FRC team Edmodo. It is also recommended to be a member of the Power Hawks Robotics Group on Facebook.

Student and Mentor Interactions

For the Power Hawks to be successful there needs to be an excellent working relationship between the students and the mentors. This means that both the students and the mentors must treat each other with respect and work together. The Power Hawks are a student led team meaning the students get to make many of the decisions as well as take responsibility for those decisions. The mentors are there to guide and teach the students. If a mentor feels some guidance and teaching is necessary, then the students are obligated to stop, listen, and consider the guidance. If the student disagrees with the guidance, then the mentor needs to let the student learn by experience whether positive or negative.

When it comes to working on the robot or other projects, students should be doing the bulk of the work. Mentors can help students with specific tasks on the robot but should not be working on the robot individually. If a student feels a mentor is doing too much of the work, then they must respectfully talk to the mentor, bring this up with the student leadership and/or the Head Mentor.

Failure to Adhere to Expectations

Occasionally, students fail to adhere to the expectations set by South River High School, The Power Hawks Robotics Teams, and Power Hawks Robotics Club, Inc. In that case certain disciplinary measures may be taken against offending students at the judgment of the head mentor, teacher advisor, school administration, and/or the board of directors.

Probationary measures

If students are struggling with certain areas of the team or are not holding up to expectations, they may be put on probation. Probation will be assessed on a case by case basis, but will always include a written document specifying why the student is on probation, and expectations for improvement along with a timeline for improvement. This document will be signed by the Head Mentor, Chief Executive Officer, a parent or guardian, and the student. Failure to show improvement could lead to removal from the team or further probationary measures.

Removal from Team

If students do not show improvement from probationary measures placed upon them, they may be removed at the discretion of the head mentor as detailed in the probationary document and in accordance with school policies.

In rare circumstances, students may be removed from the team without going through probationary measures. This will only be done in the following situations:

- If a student cause significant safety risks to themselves or others without making changes when prompted.
- If a student causes significant disturbances to the team and fails to make changes when prompted.
- If a student lies or cheats a significant amount of time or about a major topic.
- If a student threatens or harasses any other student, mentor, or individual in any way.
- If a student commits any major offences as discussed in the AACPS student handbook in relation to the team.
- Any other situation that is first approved by the head mentor, Chief Executive Officer, the Board of Directors, and school administration.

Key Roles

To ensure the continued success of the Power Hawks, each person associated with the team will fall under one or more of the key roles listed below.

Parents/ Guardians

Parents are an integral part of the Power Hawks and are extremely important to our continued success. By supporting their child in all aspects of their team involvement and life, parents ensure their child gets the most out of their education and the Power Hawks.

Parents have several responsibilities, including:

- Provide **timely** transportation for the student. Parents are expected to have the student at the designated location at the prescribed time for all events and meetings. Your child will suffer by missing out on major events if they are late. This includes transportation after events as well.
- Parents are expected to assist their student in fundraising activities.
- Parents are expected to participate in the South County Showdown FIRST Lego League Qualifier by assisting in any way needed during the event.
- Parents are expected to provide transportation to local events, including meetings both on weekdays and weekends.

- Parents are expected to attend parent meetings throughout the year. Typically, this includes one meeting for new students to the team in May, a beginning of the year meeting in September, and a Kickoff meeting in January. Additionally, parents are welcome to attend our Kickoff for the build season and are asked to attend the robot Send Off Day which will be the last Sunday of the build season.
- Parents are expected to provide accurate medical information when requested and to keep mentors informed of all changes to ensure student safety.
- Parents are expected to check email on a regular basis and read all pertinent Power Hawks emails.
- Parents are expected to fill out all required paperwork in a timely manner.
- Parents are encouraged to participate in team activities whenever possible.
- Parents are encouraged to participate in Saturday Lunches during build season.
- Parents are strongly encouraged to discuss any concerns they may have with the Head Mentor.

Teacher & Coaches Roles/ Responsibilities

Teachers & Coaches are an important asset to our team. They are responsible for:

- Facilitating communication with the school
- Filling out and signing the school permission forms and driver forms with the events manager.
- Explaining school rules and implementing them
- Being the head chaperone for trips
- Helping with recruiting efforts and promoting any events or activities within the school
- Maintaining order and appropriate student behavior at team meetings and events.

The main teacher & coach acts as the school and county liaison, and will attend team meetings whenever possible or delegate another AACPS employee to be present when he or she cannot attend. Additionally teacher support can be used to help facilitate subteams, as well as to help divide up supervision of competitions and other school-related duties.

Mentors

A mentor is an adult or graduated student who has been invited and approved by the team leadership to be an active participant on the Power Hawks Robotics Team. He or she can provide assistance in any of the following areas:

- Tutoring for students in their area of expertise
- Leadership of a subteam

- Active during robot build season, helping with either the build or business side of the team.
- Additional limited supervision during events and activities
- Assistance in planning and team operation

A mentor must have the following qualities:

- Proven leadership skills
- Experience or desire to work with youth
- Strong moral character
- Reliable, trustworthy, and organized
- Enthusiasm for the program
- Time, availability, and commitment
- Ability to pass an AACPS background check
- Ability to pass an AAC Parks & Rec. background check for PHRC

All mentors are expected to behave appropriately at all times. They are role models for the students and should exhibit a commitment to the team as well as enthusiasm for the program. Interaction with the students should always be professional and must never be on a personal/romantic relationship level at any time. Failure to adhere to this policy or any above will be grounds for your removal from the team and barring from any team events.

All mentors are expected to fill out the following at either the beginning of the year or when they first come on. A packet of forms may be given to each mentor to aid in the process.

These forms include, but are not limited to,

- Mentor website bio
- Background check (redone every 2 years)
- Child abuse video form
- TIMS registration
- TIMS Consent form
- Signed driver permission form

While slightly dated, FIRST has put together a helpful guide for new mentors called the FIRST Mentoring Guide. It is highly recommended that all mentors read through this guide for advice on how to teach and inspire adolescents. The guide may be found [HERE](#). It may also be found by searching “FIRST Mentoring Guide” on Google or www.usfirst.org.

To encourage continued success with the Power Hawks, particularly with the team's robust mentor network, a system of mentor levels have been setup. There are three levels of mentors. Each level has its own privileges and responsibilities.

Level 1

Level 1 mentors are usually students that have recently graduated from high school, typically South River High School, but other schools apply as well. They are encouraged to share their first hand experiences and expertise with the team. They will assist specific subteams with their particular skills and be active consultants on a subteam. A level 1 mentor can attend local events, not involving overnight travel with the team, but may travel on their own. Food expenses will be covered where appropriate.

Level 2

Level 2 mentors are extensively involved in the planning and overall operation of a subteam and participate with the team on a regular basis. They actively participate in the decision making process for many team operations. Level 2 mentors are given extended responsibilities compared to level 1 mentors, which may include limited supervision or chaperoning of students. They can attend local events as well as overnight events, but must pay for an appropriate portion of their travel expenses. Level 2 mentors make up the majority of the team's mentors.

Level 3

Level 3 mentors are extensively involved in the planning and overall operation of the team on a regular basis. They are active participants in the decision making process for many team operations. Level 3 mentors are given extensive responsibilities, which may include limited supervision of students and leadership of one or more subteams. They are asked to travel to all events and have appropriate expenses paid for by the team. While there are few level 3 mentors, level 2 mentors are highly encouraged to consider taking on the responsibilities of a level 3 mentor to help the continued success of the Power Hawks.

Leadership

As a student led team, strong student leadership is the foundation of the Power Hawks Robotics Team. Therefore, certain procedures and policies have been put in place to ensure an organized and efficient leadership team.

FRC Team Organization

The FRC team is organized as a business as discussed below.

FRC Student Executive Leadership Team

Student Executive Leadership comprises of four students in different roles as the chart in figure 1 specifies.

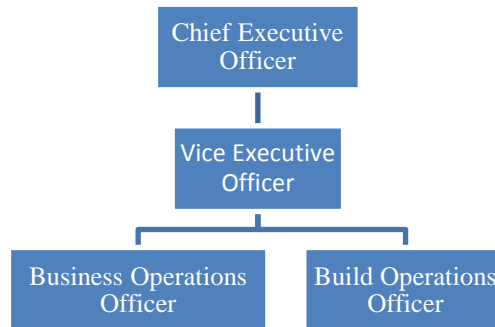


Figure 2: FRC Student Executive Leadership Team

Each role is filled through the annual application process and is determined by the application process, mentor input, and the previous year's Executive Leadership. While significant consideration will be given to the Vice Executive Officer to become the Chief Executive Officer each year, the position of Vice Executive Officer does not necessarily guarantee the position and others are welcome to apply for the position of Chief Executive Officer each year.

The Executive Leadership Team is expected to complete the following tasks, amongst others;

- Running team meetings
- Making decisions for and about the overall team
- Creating and distributing team emails and newsletters
- Developing a foundation for the college and career opportunities
- Maintaining and updating the team calendar
- Delegating appropriately to other portions of the team leadership.

Overall, the primary role of the Executive Leadership is to sustain the Power Hawks and keep the team in good standing. The Executive Leadership Team is expected to complete this role first and foremost, as it pertains to the continued success of the Power Hawks Robotics.

Further, each position has its own set of responsibilities which include, but do not encompass, all roles and tasks that the student may be expected to complete. These tasks are discussed below;

FRC Chief Executive Officer

Lead team, liaison with school and sponsors, manage TIMS and STIMS, Communicate with team, parents, mentors, approve all calendar events, dates, plan and direct team meetings.

FRC Vice Executive Officer

Assist the CEO with all tasks, fill in for CEO when absent, facilitate inter-communication for the team, create and maintain team organizational data, maintain data on team progress and student progress.

FRC Business Operations Officer

Oversee all aspects of business, work with mentors as needed, Ensure TIMS is complete, update business plan, attend PHRC Board meetings, maintain business notebook, and send business emails.

FRC Build Operations Officer

Plan build days, oversee all build support, create a build schedule with a planning tool such as a Gantt chart and monitor progress, ensure safety, be rules expert, work with mentors as needed, design and build robot and demobot, send build emails.

FRC Student Leadership Team

Below the Student Executive Leadership Team is the Power Hawks Student Leadership Team. These are generally single person leadership positions that are responsible for overseeing the wellbeing and success of each subteam. The hierarchy of these roles is shown in figure 2.

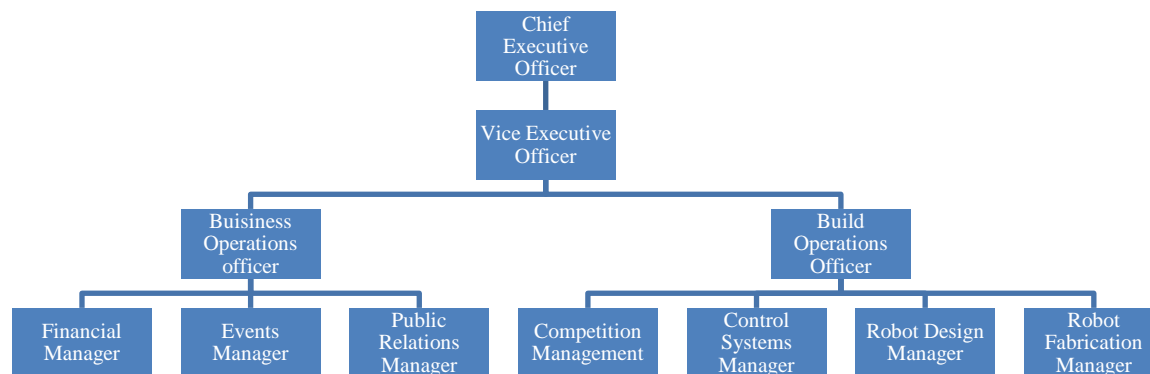


Figure 3: FRC Student Leadership Team

In general, each of these roles is fulfilled by students who have shown particular potential in the previous season, but they may be filled when a new student shows specific qualities during the application process. Each position is filled with one student only, with an assistant assigned at the request of the student in the position and with the agreement of the Executive Leadership Team. Each student in the Student Leadership Team is expected to aid the Executive Leadership Team's primary role of continuing the success of the Power Hawks Robotics. While this is their primary role, each position also has more specific roles as detailed. Please note, this is by no means an exhaustive list and more may be expected of each position.

FRC Financial Manager

Roles include; maintaining and communicating team budget, ordering parts, handling team member financial accounts, liaison with PHRC treasurer, liaison with SRHS financial secretary, maintain contact with new and current sponsors, coordinating the procurement of new sponsors,

send invitation to events and communications about progress to sponsors, plan fundraisers, coordinating fundraising, complete fundraising paperwork.

FRC Events Manager

Roles include; managing FLL qualifier, connect with charities, plan community service events, manage demo programs, connect with schools and sponsors for demos, organize volunteers and paperwork for specific events, coordinate design of all spirit wear and T-shirt design, liaison with yearbook, organize team-building activities, manage communications for team-building and spirit, coordinate all travel and arrangements for away field trips, manage paperwork for field trips.

FRC Public Relations Manager

Roles include; completing all necessary awards materials, create videos for team events, document all team activities through photography and videography, ensure identity standards are held by all persons, assist in all award documentation, creation, and presentation of awards, document and compile the engineering notebook, maintain existing graphics and create graphics as needed.

FRC Competition Management

Roles include during competition events; coordinating drive team, completing all prerequisites for scouting, organize scouting at events, manage pit, manage front of house at pit, speak with judges, present awards, organize photography and videography during events, manage stands and spirit, collect data for drive team.

FRC Control Systems Manager

Roles include; design control system, plan for and integrate sensors, program robot while integrating electrical and user-input, design electrical system, wire and maintain electrical systems.

FRC Robot Design Manager

Roles include; coordinating robot design with entire team, implement design in a prototyped robot, digitally design and test robot, design robot components and upgrades.

FRC Robot Fabrication Manager

Roles include; creating drivetrain, building bumpers, designing and building robot mechanisms to manipulate field components and game pieces, design and build pit, build mock field components for testing, maintain and upgrade demo robot, maintain and upgrade backup/practice robot, keep all storage rooms clean.

FTC Team Organization

The FIRST Tech Challenge team maintains leaders to ensure the team succeeds to the fullest. Other members may have more unofficial roles on the team.

FTC Team Captain

Leads team meetings, organizes events, liaisons with other Power Hawks teams, PHRC, and teams, ensures the wellbeing of team students and ensures deadlines are met.

FTC Team Assistant Captain

Assists Team Captain in all tasks, works closely with students to ensure tasks are being completed. Fills in for Team Captain when they are absent.

FTC Build Captain

Runs the design and creation of the competition robot. Ensures it constraints to all rules and will work most effectively. Keeps students on task and ensure goals are met in a timely fashion.

FTC Programming Captain

Runs the programming of the competition robot. Ensures it constraints to all rules and will work most effectively. Keeps students on task and ensure goals are met in a timely fashion.

VRC Team Organization

The Vex Robotics Competition team maintains a team captain and team assistant captain. Other members may have more unofficial roles on the team.

VRC Team Captain

Leads team meetings, organizes events, liaisons with other Power Hawks teams, PHRC, and teams, ensures the wellbeing of team students and ensures deadlines are met.

VRC Team Assistant Captain

Assists Team Captain in all tasks, works closely with students to ensure tasks are being completed. Fills in for Team Captain when they are absent.

Role of Student Leaders

Each student in the student leadership team is tasked with running their group of students as they see fit while still maintaining the team's goals and outcomes. Student leaders are to organize their team with input from the Executive Leadership Team and mentors so that they may do the best they can for the students and the team.

Procedures

Fundraising

All students are required to participate in team fundraising activities. The funds raised are typically used for student expenses and materials for the team. Fundraising often also helps us to get our name out in the community, and so it is required that all students are responsible, respectful, and engaged during fundraising activities, including during setup and teardown.

Fundraising may include such activities such as demonstrations, car washes, school sales, meals, flocking, or other such programs. Students are encouraged to bring any fundraising ideas to the fundraising captain to help develop more opportunities.

Meeting Procedures

Team meetings are where the majority of the work for the Power Hawks is completed. Therefore, it is essential that every student make every attempt to attend our meetings. While a certain amount of missed meetings is accepted, frequent absences, especially when not discussed prior, can result in removal from the Power Hawks or loss of privileges and position.

Meeting Schedule

While the meeting schedule may change year to year, often it is as follows:

FRC Pre build Season

Pre-build season is from the beginning of school in August to the first Saturday of January when build season starts. Meetings will be every Thursday, with build and business alternating so that the majority of students only have to attend every other week. Students on both sides of the team are expected to come every week. We will also occasionally have full team meetings throughout the fall.

FRC Build Season

Build season lasts the time between when the new FRC game is announced until Stop Build Day, approximately six weeks later. Due to the limited time we have to build a robot we will be meeting most during this time period. All students will meet Sunday, Monday, Tuesday, Thursday, Friday, and Saturday unless otherwise specified. Exact times will be discussed each year.

FTC Build Season

Build season starts at kickoff on the first weekend in September and runs through to our first qualifier in December or January depending on the schedule for Maryland FTC Qualifiers. All

students will meet Tuesday, Thursday and Saturday unless otherwise specified. Exact times will be discussed each year.

VRC Build Season

Build seasons starts in the beginning of the school year and runs through to our first competition in the winter. All students will meet Tuesday and Thursday after school unless otherwise specified.

Post build Season

It is extremely difficult to plan this part of the year before we know what competitions we are going to. Generally, it's a middle ground between pre build season and build season in terms of when the team will be meeting. More information will be given during the build season.

Meeting Regulations

To ensure the wellbeing of the Power Hawks certain procedures have been put in place. It is imperative that all students follow all regulations to the fullest or they risk losing privileges and roles.

Students are to respect and follow all wishes and requests that mentors make at all times. Mentors are there to help you learn, and so it is imperative that you respect them to the fullest. While the mentors try not to touch the robot or tell students what to do instead of teaching them what to do, sometimes mentors do need to be hands on. This is fully acceptable, and it is expected for you to work with them accordingly. If you feel that the mentors are too hands on and are starting to limit your experiences, please talk to the Head Mentor and they will address the issue.

While there may be some free time occasionally, the mentors and leadership work hard to ensure that you will always have work to do. Therefore, please do all work to the fullest, and if you have down time, use that to help other teams, clean, or organize.

There is to be no game playing during meeting times or 30 minutes before meetings. Any students who are playing games will have their games confiscated and parents must pick them up.

Students, especially captains, are expected to start setting up materials and tools up to 30 minutes before the meeting officially begins. These way students can get right to work when mentors arrive and not have to take more time to setup when learning could be happening.

Students should never be eating during a meeting except during scheduled food breaks. If students cannot eat before they attend a meeting they are expected to go elsewhere in the school and eat so that they do not distract other team members. They are still expected to be on time at the meeting though, without food.

Above all else, **safety is our first priority!** If at any time you feel unsafe please tell your mentor and/or the Head Mentor. If you do not know how to use a tool or certain equipment please let us know before using it! Proper tool safety is imperative to running a safe facility. Additionally, safety glasses are **required** at all times in the shop area, where any tools are being used, or where the robot is being operated.

Travel Procedures

Traveling as a team can be an extremely exciting and rewarding portion of our season. A great deal of effort, planning, and organization is required to coordinate all of the associated activities though, so please make every effort to make the trip easy for all. You are encouraged to have fun, but be smart about it. A strong effort is made to make the travel experience educational and culturally interesting as well as fun.

All team members are eligible to travel to all events unless otherwise exempted. A student may be exempted from travel due to a prior commitment or disciplinary reasons from the mentors and/or school administration. All team members are expected to attend all events unless discussed with the Head Mentor. If finances are an issue, please talk to the Head Mentor and we will work to see what we can do. Failure to attend an event without prior discussion may result in dismissal from the team or loss of team privileges.

Packing

It is very important to pack efficiently. That means bring only clothes and items that are necessary and required. Do not show up with many different bags. It is wise to have only one piece of luggage and a carryon bag for the bus/competition. All luggage must be identified with the name on a tag prior to loading. A recommended packing list will be distributed before each event.

Bus Travel

We use busses as our mode of transportation to most events. It is important that you continue to be responsible, respectful, and engaged on the bus.

If having a snack or drink, please dispose of the waste when finished in order to keep the bus clean. When leaving the bus, make sure to check the area to make sure all belongings and trash has been accounted for.

Students are allotted a single seat only. If extra seats exist on the bus they will first be given to mentors and chaperones. Then, only if every adult has an extra seat, students may be given an extra seat.

Students must stay in their seats as much as possible. Under no circumstances are students allowed to sleep on the floor.

Students may bring personal media players or devices to listen to music or watch videos. However, they must be used with personal listening devices and others should not be able to hear what you are listening to. Failure to follow this policy will result in the confiscation of your device for the duration of the trip.

Most busses have video capabilities for use during travel. The choice of movies will be controlled by the mentors, with input from the students.

Personal Vehicles

Often, parents, mentors, or other students will transport students to local events. At all times seatbelts must be worn and all other laws and regulations must be followed. In addition, a driver permission form must be on file with the Head Mentor for each individual trip.

Competition Procedures

Typically, the Power Hawks attends one or two regional competitions and/or the Championship competition and FTC attends two qualifiers.

FRC Regional Events

Which regional event we attend is dependent upon location and timing of the events. Typically, one of the events we attend will be the Chesapeake Regional and the other will be further away.

Championship Event

The Championship event is very similar to a regional but on a significantly larger scale. There will be teams from all over the world. We will generally only attend the Championship event if we have won an award to warrant going or if we are invited.

Minimum Requirements for Attending Events

Team members must be in good standing with the team in order to attend any events. This includes meeting the necessary grade requirements, attending a minimum number of work days during build season, and completing a minimum number of volunteer hours during the year.

Absences

Students must attend a minimum number of work days during build season. Students are not allowed to miss the following number of days:

- Local regional event no more than 12 total absent days, including 9 excused and 3 unexcused
- Travel regional event no more than 11 total absent days. Including 8 excused and 3 unexcused.
- Championship event no more than 9 total absent days, including 7 excused and 2 unexcused.

An excused absence is any absence that is made known to the Head Mentor and/or Coach at least one hour before a meeting begins. The absence must be for a legitimate excuse such as a family affair, meeting or event for another group that a student is a part of, or another major aspect of the student's life. Excused absences do not include things such as wanting to be with a group of friends instead of being at a meeting, or excessive missed days for school work. While an occasional day missed for a major project is acceptable, students should not be missing multiple days for school work as this would be attributed to poor time management by the student.

Volunteer Hours

Team members must be complete a minimum number of volunteer hours in approved STEM or robotics outreach events. Students must complete the following number of hours:

- Local regional event more than 10 hours of volunteer hours.
- Travel regional event more than 15 hours of volunteer hours.
- Championship event more than 20 hours of volunteer hours.

All volunteer hours must be approved by the Head Mentor to count. Students are responsible for filling out the required paperwork and are required to hand it in within one calendar week of the volunteering.

FRC Competition Schedule and Procedures

Most events follow a set pattern:

Wednesday

The day before competition starts is when we try to arrive in the event city. There is also setup time during the evening where a small group may attend the regional to unload our trailer and set up our pit.

Thursday

A small group of team members will enter the pit early to setup. Another small group will arrive shortly after to run the event for the day. The rest of the students will either not be required to attend (if local) or will have another activity to do during the day. On away trips, all members will eat dinner that night together and have a meeting that night at the hotel to discuss the day's events.

Friday

In the morning, the team will have breakfast together for away events. Team members will be expected to meet at South River High School for bus transportation to local events. The entire team will arrive at the competition as soon as the venue is open. The pit crew, drive team and any other members who need to go to the pit will go to the pit immediately. The rest of the team will find a location in the stands. All members will be present in the stands for opening ceremonies.

All team members are expected to attend opening and closing ceremonies on both Friday and Saturday!

All students will be present in the stands for every match that we play on to cheer on the team. The only exception to this is when the awards team is presenting. All team members are expected to complete any tasks assigned to them.

Saturday

In general for local events, we travel in a caravan using self-transportation forms. Unless otherwise approved, students will meet at the school at the stated time for transportation. Upon entering the event venue, students should go to their designated locations, either being in the pits or in the stands.

All students are required to be present in the stands for all matches that the Power Hawks competes in, as well as the opening and closing ceremonies.

FTC Competition Schedule

Most qualifiers and state championship are held on a Saturday or Sunday and last from 7am until 5pm and can run later if there are issues with the field control system.

Thursday

The week of our scheduled event, we pack for the event.

Saturday or Sunday

We generally depart from South River High School at 6:30am by bus to our qualifier. Upon entering the event venue, students should go to their designated locations, either being in the pits or in the stands.

All students are required to be present in the stands for all matches that the Power Hawks competes in, as well as the opening and closing ceremonies.

FTC Super Regionals and World Championships Competition

Super Regional Eastern Division is a two day events and world championship are a four day event starting on Wednesday at noon and end on Saturday. For these events will follow the general competition rules.

General Competition

The following are rules and policies that apply to **all** students during the entirety of the competition.

As stated above, students are to be together in the stands for both the opening and closing ceremonies for Friday and Saturday. Additionally, students are expected to be in the stands for every single match that the Power Hawks participate in throughout the competition. The only exception to this is if students are presenting or interviewing for awards, or are on the drive team or field team. Lastly, all students but the designated alliance captain is to be in the stands for alliance selection on Saturday.

At no times are students to be playing any sort of video, board, or card game during competition. Remember, you represent our community, school, and team, and playing games during competition is highly looked down on by others. If anyone is caught playing any sort of game, those games will be confiscated for the remainder of the competition and given back only to the student's parents. If the student is caught again, they may risk forfeiting any positions they have on the team. In other words, do not bring games to competition!

There are many roles and jobs throughout the competition and every person's role is vital to the success of the Power Hawks. If anyone is unclear of what their position is, please talk to the Head Mentor and Chief Executive Officer, but do not just start doing a job because you feel like it or are bored with your current one.

During competition if you do not have a specific role for some time, please look into helping scouting. Scouting is an essential operation for the success of the Power Hawks on the field and we need as many students as possible to help out throughout the competition. These positions will be assigned accordingly by the Chief Executive Officer and the scouting captain.

At all times students are to be in groups of three or more, unless specifically allowed by the Head Mentor for certain tasks. (Sometimes scouting requires only two people for certain jobs, for instance.) While it is okay for students to go get food or see certain surrounding areas, it is

essential that you let your chaperone know, and it is essential that you make sure you are still back for all matches. If you are part of the pit crew, lunch times will be arranged for you so that we always have a presence in the pits.

When in the stands please cheer for our team! It makes a huge difference to the people on the field hearing our team cheer for our success, so please go all out, keeping in mind gracious professionalism, and cheer for our team!

Above all, please think! If you think it may be a bad idea, it probably is!

Hotel Procedures

When we travel, we often stay at a hotel for several nights. Students will be organized into rooms of either three or four students. There are no co-ed rooms. Each room will have an adult assigned to monitor and coordinate activities, including random room inspections. Students are expected to follow all AACPS rules and regulations at all times.

Check in

When we arrive at the hotel, students will go to a designated location to wait for keys. At that location students will need to be very quiet as to not disturb the other guests. Students are to proceed to their rooms and unpack as soon as possible. Please alert the Head Mentor if there are any room issues.

At the Hotel

Often there is free time in the hotel to get snacks, play games, swim, or be with friends. Students are expected to act responsible during this time as they are always representing the Power Hawks. They are to not go outside of the hotel at any time. At no point should only one boy and one girl be in a room alone. Whenever there are two sexes in the room at the same time the door must be completely open. Students are also expected to be in their rooms at the end of the night (often 11:11) when they are expected to go to sleep shortly afterwards.

Check out

Students are expected to be packed and ready to go at our departure time. All rooms are to be clean and tidy.

College and Career Opportunities

Along with the mission of FIRST, the Power Hawks strive to provide opportunities and guidance in college and career readiness.

Scholarships

Leadership will work with the school's counselors to publish information on the scholarships offered for FIRST students. Mentors will also be available to write recommendation letters for any students applying to college or for scholarships. "Scholarship Opportunities" meetings will be made available on a semi regular basis to inform and instruct students in the scholarship process. Scholarship information is also available online at <http://www.usfirst.org/aboutus/scholarships>.

Engineering Opportunities

Leadership will look for opportunities such as job shadowing programs in conjunction with the school's STEM program to give students better insight into their chosen professional interest areas.

Resume and College Essay Help

As resumes and college essays are an integral part to the application process, students are encouraged to seek help when writing either document or help with editing. Please see the Head Mentor and they will point you in the right direction for a professional mentor to review your work.

Letters of Recommendation

Letters of recommendation from a program such as the Power Hawks can carry significant weight in internships and college applications. If you would like a letter of recommendation, please see the Head Mentor to ask for one. When you speak with the Head Mentor, please make sure to give them at least three weeks' notice, an address for where to mail the letter or website link to upload the letter, and a short description of what the letter should discuss.

Contact Information

Social Media

It is recommended to follow the Power Hawks on social media to keep track of what's going on and what events we are doing.

- **Facebook:** PowerHawks
- **Twitter:** @PowerHawks1111
- **Instagram:** powerhawks
- **Flickr:** Power Hawks

Communications Contact

For information about the team, go to www.powerhawks.org or email zcohen@aacps.org

Resources

www.powerhawks.org

www.usfirst.org

www.mdfirst.org

www.vexrobotics.com

www.robotevents.com

www.chiefdelphi.com

www.firstnemo.org

Acknowledgements

Thank you to FRC teams 45, 47, 51, 1241, 1511, and 2377 and Anne Shade, Maryland Senior Mentor for ideas for the team handbook.

Note: This handbook may change during the course of the year. All updates and changes will be made available and apparent to all individuals associated with the team and a time period as discussed by the Head Mentor will be put in place for new rules and regulations to come into effect.

Any questions or comments may be addressed to:

Zachary Cohen, FRC Head Mentor, at zcohen@aacps.org

Richard Chapman Jr. FTC Head Mentor, at powerhawksrobotics@gmail.com

Rob Tompkins, VRC Head Mentor, at rtompkins@aacps.org

Revision D. Last updated 6/2/2014

Signature of Understanding

All students are required to have this page on file with the Power Hawks each year. Print out this page or remove this page from the handbook, fill it out, and hand it in by the specified due date.

I, _____ (student name) have read the *Power Hawks Team Handbook* in its entirety for the current competition season year and agree to follow all rules, regulations, and guidelines in the book or suffer appropriate consequences as discussed in the handbook or by the Head Mentor. I have also shared the handbook with my parent or guardian and they understand what is expected of both their child and them.

Signed,

_____ Student name printed	_____ Student name signed	_____ Date
_____ Parent/Guardian name printed	_____ Parent/Guardian name signed	_____ Date