

# HOWDY BOTS

FRC Team #6377



Team Handbook

2018 Season

[www.howdybots.org](http://www.howdybots.org)

*The Howdy Bots mission is to inspire, promote and foster STEM education through mentor and student cooperation leading to competing in FIRST Robotics Competition events.*

Sponsored by  
ATX Robotics, Inc.

# HOWDY BOTS

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## 1. WELCOME

Welcome to FRC Team #6377, the Howdy Bots!

To those families who have been with us and for those now joining us for their first year, we want to celebrate the growing community that we are so fortunate to be a part of, and to welcome you to it! It is because of each and every one of you that we are able to bring *FIRST* to more kids in the Austin community. FRC caters to a variety of interests: computer science, engineering, physics, math, graphic/video artistry, business, communications, and writing. No matter where your interests are, there is something waiting for you on our team!

In this Team Handbook for 2018 we will describe team essentials, the essence of the Howdy Bots and *FIRST* culture, information, the expectations we have for students and parents as well as policies that everyone needs to be familiar with. Team members and their parents are asked to read all sections to become familiar with the team's policies. At the end, in addition to signing a ridiculous number of waivers, you will be asked to sign and return an acknowledgment that you have read and understand the information, including policies on safety rules, time commitments and student behavior expectations.

This handbook is similar to a field guide in that it contains enough information to get everyone started on their journey ahead, as well as including a few tidbits that you might not find elsewhere. Though there will be updates throughout the year, this is a good document to keep in a safe (and easy to remember) place to reference later. So jump right in and explore some things familiar and others waiting to be discovered!

Evan Marchman

Head Coach - Howdy Bots, FRC #6377



## 2. TEAM OVERVIEW

There is no prior experience necessary to become a member of the Howdy Bots. However, team members are expected to be dedicated and hardworking. This is a demanding program, but it is also one of the most rewarding things a student can do in their teenage years.

### What do we do?

We design and build a really cool robot, and compete against other robots in a game that's different each year! But it's more than just building a robot – our team operates like a small business and feels like a family. We have different “sub-team” groups that handle everything from marketing and fundraising to programming and electrical work. Even if you have no idea how to hold a wrench, there's something for you here, and we'll teach you how! *FIRST* is not just about robots; it's about ideas and people, too.

### Why do we do it?

Because it's fun! *FIRST* is all about having fun while learning, and so are we! Along the way, you can learn technical skills in mechanical and electrical work and computer programming, but you'll also learn about teamwork, leadership, respect, and integrity. You'll get hands-on learning from engineers and other professionals working in the real world. Above all, you make lifelong friendships and have a lot of fun!

### Who is this team for?

We are made up primarily of homeschoolers, but are also open to private and public school students who do not have another team to join. Howdy Bots is for teens age 13-18 (rare exceptions can be made on a case-by-case basis for extremely driven younger students). Students with special needs are also welcome, but because the coaches and mentors are not trained in special needs education, a non-mentor parent may be required to attend with them. In this situation, the parent is expected to follow the mentor guidelines and will be under a similar probationary period as other would-be mentors, though will not be considered official mentors. Please contact the Head Coach to discuss if your special needs student is a good fit for Howdy Bots.

### Where do we meet?

We meet in the garage of our Head Coach. Our workshop has all the tools and materials we need, but it is “cozy”. On nice days we expand out into the driveway, and occasionally we break out into smaller groups and meet inside.

### How is the team run?

On the Howdy Bots, mentors and coaches actively share their knowledge and experiences with the team to help foster intellectual growth. The mentors and students become united through a partnership. Each works collaboratively toward a mutual and beneficial goal. Mentors provide students with opportunities to make choices, both good and bad. They demonstrate the value of success he or she has encountered during his/her career path and uses these skills and successes to share knowledge and values with team members. The “learning and doing” progresses in four steps. The mentor starts out as “I do” and in certain areas, can finish as a sustaining “I watch.”

1. I do – You watch
2. I do – You help
3. You do – I help
4. You do – I watch

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Team decisions are a collaborative effort between students and mentors. All opinions will be heard and considered. The team should understand that in the end, responsibility lies with the mentors to ensure the success of the team and from time to time the mentors may steer and/or override a decision for the overall benefit of the team.

## WHO ARE THE COACHES/MENTORS?

### Head Coach/ Engineering Mentor

Evan Marchman, the Head Coach, is the primary adult contact for the team, and has overall responsibility for team actions, decisions, and oversight of all mentors and student members. He is also responsible for oversight of all engineering-related projects such as robot design & construction, engineering documentation, the robot's competition performance, and providing technical guidance. Coach Evan does his best to channel Mr. Miyagi (*The Karate Kid*, 1984) at all times, and build a rapport with each individual student. He likes to have fun and joke around, but just like Mr. Miyagi, he's a stickler when it's time to get things done. Coach Evan expects respectfulness, attentiveness and cooperation when it's Howdy Bots time, whether at meetings, build sessions, demos, fundraisers, traveling together or competitions. Coach Evan will be looking for maturity and reliability as signs that a student is ready for more responsibility and leadership.

### Assistant Coach/ Business Mentor

Rachel Chamberlain, the Assistant Coach and Business Mentor, is responsible for oversight and guidance of all non-engineering projects such as fundraising, graphic design, social media, outreach, marketing and operations. Coach Rachel is nurturing and engaging, and encourages all team members to try new things to build confidence and strengthen their skill set. She is creative and passionate about helping students find their own strengths and inner spark. Rachel's coaching style is more inquisitive in nature, asking students questions to challenge their thinking and stretch their imaginations. She is encouraging and has a "you can do anything you put your mind to" attitude. She looks for learning and coaching opportunities for important life skills like public speaking, project management, business writing, computer skills, professional conduct and etiquette, and working as part of a team.

### Team Administrator

Jennifer Marchman, the Team Administrator, takes care of most of the paperwork of the Howdy Bots, coordinating with *FIRST* headquarters and ensuring backend administrative tasks are covered.

### Mentors

Mentors are adult volunteers, not necessarily parents, that are formally invited by the Coaches to provide technical and/or business assistance for the team. The Coaches seek out professionals and experts in their fields (i.e. practicing engineers and active business people) to share their knowledge and skills with the team. Mentors go through a vetting process to ensure that they will be a good fit for the team, and hold values consistent with the Howdy Bots and *FIRST*.

The Howdy Bots team is sponsored by ATX Robotics, a local non-profit organization dedicated to sponsoring *FIRST* teams. We are not affiliated with any public or private schools thereby allowing our membership to be open to all students regardless of their educational affiliation.

## 3. ABOUT *FIRST* AND FRC

### About *FIRST*

*FIRST* (For Inspiration and Recognition of Science and Technology) was founded in 1989. Based in Manchester, NH, the 501(c)(3) not-for-profit public charity designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math (STEM), while building self-confidence, knowledge, and life skills. The intent is to inspire an appreciation for the real-life rewards and career opportunities in these fields by challenging students and their adult mentors to solve an intense engineering design problem.

### *FIRST* Origins

*FIRST* was started by inventor Dean Kamen, who saw a culture based solely around athletics and celebrity gossip. Kamen realized that there is more need for people in science and technology careers than there are sports and entertainment. He partnered with Woodie Flowers, an MIT professor, to create *FIRST*.

### *FIRST* redefines “Winning.”

*FIRST* is More Than Robots. Teams are rewarded for excellence in design, demonstrated team spirit, Gracious Professionalism®, maturity, and ability to overcome obstacles. Scoring the most points is a secondary goal. “Winning” means learning, being inspired, and building partnerships that last.

### What is FRC?

*FIRST* Robotics Competition (FRC) combines the excitement of sport with the rigors of science and technology. Participants call it “the hardest fun you’ll ever have.” Under strict rules, limited resources, and an intense six-week time limit, teams of students are challenged to raise funds, design a team “brand,” hone teamwork skills, and build and program industrial-size robots to play a difficult field game against like-minded competitors. The competitions are high-tech, spectator sporting events which are the result of brainstorming, teamwork, mentoring, and project deadlines. It’s as close to real-world engineering as a student can get.

### *FIRST* Impact

Colleges and employers recognize the crucible *FIRST* participants have been through, value their experience and expertise and actively recruit such students. Participants have access to over \$50 million in scholarship money exclusively for students who participate in *FIRST* Robotics. Students who have graduated from FRC teams have gone on to attend some of the nation’s top engineering schools and work with some of the world’s biggest technology companies.

### Skills Learned

Students are inspired to become leaders and innovators, and enhance their 21st century skills. They are learning from adult mentors who are Engineers, Business and Marketing professionals, Scientists, and Leaders in their industry and profession. These mentors will share their knowledge and skills with students, including:

- Public speaking and debate
- Advanced math and engineering skills
- Business planning, fundraising, project management, leadership, and teamwork
- Writing (technical, business, and creative)
- Graphic design, video production and photography
- Computer programming and Computer Aided Design (CAD)
- The Engineering process and scientific method

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## 4. HOWDY BOTS VALUES AND GUIDELINES

**Gracious Professionalism:** A term coined by FIRST, Gracious Professionalism is 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. As Howdy Bots, we strive to be mindful, respectful, and treat others the way we want to be treated.

**Coopertition®:** Coopertition is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete. It means competing always, but assisting and enabling others when you can. This extends beyond the playing field. When trying out for a position on the Howdy Bots you should be actively trying to help your teammates get better at the same time, and thus for the team to get better. Cheating and sabotage will never be tolerated.

**We Is Greater Than Me:** First and foremost, this is a team. What one or two people do isn't as important as what the team accomplishes together. Wins, losses, successes and failures are the result of the team's collective effort--- not the effort of a single person or sub-team. Team members are expected to put what's best for the team ahead of their own team-related ambitions. Students should always be asking themselves "What can I do to help the team succeed?" In the end, people rarely remember individual performances. What people always remember is what the team accomplishes.

**Integrity:** Students are expected to have integrity. This means being honest with each other as well as the team's mentors and not trying to cover up mistakes or errors in judgment. We understand that students and mentors make mistakes and that's OK. However, team members should own up to those mistakes. Being forthcoming and honest is always best.

**Acceptance of Failure as a Tool for Learning:** Many successful people fail quite often, but then learn from the mistakes and move forward, taking their failure in stride. A team member who has this ability can go far in the team and beyond.

**Attitude Is Everything:** Whether it is an off-season meeting or an important match, go into each situation with a positive attitude. If you go into a situation with a bad attitude, you're probably not going to have a good experience.

**You get out what you put in:** If you apply yourself and invest the time and effort into the program, you will have one of the most rewarding experiences of your life. On the other hand, if you put little effort in, you will not get as much out of it, and potentially hurt the experiences that your friends and peers would have gotten out of the program. Students who are hardworking and committed will be rewarded over students who have been on the team longer or have more experience. For example, a new student who joins the team, shows up to many events, and works hard to better themselves and the team, will be chosen for a position they desire over someone who does not put forth as much effort.

**You are your own best advocate:** No adult mentor or student leader will 'make' a student do something. This is a self-motivated program. If you want to learn, ask a mentor or coach. If you want to work, pick up a tool or ask a mentor (that is why they are there.) We will make every effort to

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encourage involvement by all team members, but in the end it's up to you. If you are not sure where you fit in, or aren't sure of what to do, please talk to a mentor or coach. Self-motivation is what drives the Howdy Bots!

**Never Rest On Your Laurels, Always Keep Improving:** Never assume you know everything. Always look for ways to improve yourself and the team. Every day is an opportunity to learn and improve. Try something new, work in a new sub-team, practice an old skill, etc. Be proud of what you've accomplished in the past, but don't use it as an excuse to stop improving.

**Take Responsibility:** Team members must understand they have a sense of responsibility to make sure they are fulfilling their designated obligations. Take initiative to do things you have been assigned, before you are told. (Note: taking initiative should not be confused with making decisions for the team without their knowledge or starting projects without the mentors' consent)

**Teamwork:** Team members are urged to cooperate at all times. This means that if a mentor, coach or team leader makes a request, you will comply with the request to the best of your ability. Ignoring directions or requests from a mentor or student leader is not in the team's best interest. If you feel a request is out of order or beyond your capabilities, you are encouraged to respectfully talk it through with the person making the request or the Head Coach.

**No Drama!:** Everyone wants to have a good time and the best way to ensure that is by reducing the amount of drama. If you have a real issue, it is best to discuss it with a mentor.



## 5. COMMITMENTS

Being a member of the Howdy Bots family is a big commitment on many levels. We will go into much more detail about each of these commitments later in this handbook, but on a high level, team members and their families must be prepared for the following commitments.

- **Time** – Being a member of the Howdy Bots is a huge time commitment for the team members *and* their families, especially from January to April when the team may meet over 30 hours per week.
- **Money** – All team members will be required to pay dues (\$300/year) and actively participate in team fundraising efforts. In addition, families are responsible for all travel costs related to competitions (transportation, hotel, food, etc.).
- **Communication** – Consistent communication within the team is vital to our success. Every team member commits to keeping updated with team communications at least daily.
- **Behavior & Rules** – The Howdy Bots spend a lot of time together, often in close quarters. To maintain a positive and enriching culture, the team has a very detailed list of rules and expectations which every member must agree to follow.
- **Parents** – As the parent of a Howdy Bot, you commit to getting your child to meetings on time, providing snacks and meals according to the team schedule, and keeping up-to-date on all team communication.

## 6. TIME COMMITMENT

*FIRST* Robotics Competition (FRC) is a year-round activity. The expectation is that team members will attend scheduled meetings, events, and competitions that take place throughout the year. While academic and family obligations come first, meeting your obligations to the team may mean re-arranging your schedule to be able to participate in team activities.

The time commitment expected of Howdy Bots team members is high and will be outlined further in the following descriptions of our “Seasons.” Commitment to the team increases substantially from January to May. Students are expected to be reliable: on-time, prepared to work, and arrive with a positive attitude.

To get the most out of what *FIRST* has to offer and to be a team member that others can count on, every team member needs to commit to making full participation in team activities a priority. Participation in other extracurricular activities such as jobs or sports should be carefully taken into consideration prior to joining the team.

As a team, we understand scheduling conflicts. When scheduling conflicts occur, we expect the student to inform the team, particularly the Head and/or Assistant Coach, as soon as possible. Howdy Bots has room for different levels of student commitment. However, it is important for each team member to understand upfront that regular attendance often directly translates into more responsibility and voice in decision-making. While Howdy Bots can sometimes work with a student to coordinate the Howdy Bots schedule with their own personal schedule, forward progress for the team as a whole cannot wait for an individual team member. Decisions and completion of tasks may occur during a team member's absence, and such a decision is at the discretion of the team members, mentors and coaches present at the time.

Partly due to the intense time commitment required by Howdy Bots, the minimum age to join the team is 13 years old (by January 6, 2018).

## 7. MONEY

Participating in a *FIRST* Robotics Competition is an expensive undertaking. The annual team budget is \$35,000. Howdy Bots relies heavily upon the support of our community through sponsorships, grants and corporate donations. The remainder comes from team fundraising, individual donations and student dues.

The annual student dues are \$300 per student. Additional students from the same family are \$200 each. Team dues are required of all participants by October 30, 2017. Dues are an important part of our annual budget and help cover the costs of things like insurance and team t-shirts. *Dues are non-refundable.* You are welcome to try out the team to make sure it's a good fit for your family until the firm deadline when all payments are due.

All students are expected to actively participate in fundraising with the team. This participation takes many forms including letter writing to friends and family, visiting potential corporate donors, assisting with grant applications, staffing our table at fundraising events, writing thank you letters to donors and more.

The Howdy Bots travel to two regional competitions in March and April, and will potentially attend the *FIRST* Championship competition (Houston) in April. Each student and mentor must pay their own way (hotel rooms, meals, transportation, etc.) for each of these competitions (travel is not covered by dues). The team will book a block of rooms together for the best rates. All team members are expected to stay in the team accommodations.

Families who think they may need financial help to travel must notify the Head Coach as soon as possible. Depending on the team's financial situation, there may be full or partial scholarships available for travel, and/or partial reimbursements for all team members. Families who choose to forgo such reimbursements will be acknowledged and thanked in writing/email (though this is for Howdy Bots records, and is, unfortunately, not considered a donation so it is not a legal receipt for tax purposes).

Howdy Bots does not want to exclude any interested student due to financial constraints. Please speak privately with the Head Coach if this is an issue for you. Hardship scholarship requests must be brought to the Head Coach well in advance of any payment deadlines and as soon as possible for financial planning purposes and for unambiguous record keeping.

Checks for dues payments, travel expenses and donations should be made payable to **ATX Robotics, Inc.**

## 8. TEAM COMMUNICATIONS

Clear and consistent communication within the team is vital to our success and is an integral part of the team. Our primary method of communication is Slack, an online chat tool with both web and mobile apps. Students are required to check Slack regularly. This means at least daily during busy seasons, as well as making sure their phone is charged and battery is conserved during competitions. Additional information, calendars, meeting notes and other resources will be posted to the team website, [www.howdybots.org](http://www.howdybots.org).

We recognize that each family has unique circumstances. It is our goal to be as inclusive as possible while creating a robust and viable team. Technical skills are the most obvious thing we teach. But we feel personal growth is the most *important* thing we teach. To this end, we strive to develop personal responsibility in each student and encourage the student to be the primary communication conduit with the team and mentors.

Slack usernames should be setup in the following format: `firstname_lastname`

## 9. TEAM BEHAVIOR AND RULES

Each team member is ultimately responsible for his/her own behavior. However, how team members behave will reflect on the team, and the sponsors. You are expected, at all times, to be polite and respectful of everyone. We are all role models and our goal is to present an image that is positive and in the spirit of team building – not a phony image, but an authentic attitude of appreciation and professionalism.

- **Be Respectful:** Team members are expected to be respectful at all times. This includes not talking over your team mates or holding side conversations when others are talking, refraining from the use of inappropriate, offensive, or foul language, and being respectful of everybody's ideas and opinions.
- **Cell Phone Use:** During meetings, cell phone use in the service of the team is encouraged. Cell phones that distract from the discussion or work at hand will be asked to be put away. Additionally, team members will not be permitted to play video games during meetings or times when they could be more productive. Recreational cell phone use should be saved for break times.
- **Attendance:** All team members are expected to attend as many meetings as possible. Be prompt at all meetings and bring all required materials.
- **Tool Safety:** We take tool safety very seriously and make it clear that mentors and coaches have the absolute say in when it is or is not appropriate for a student to use a tool. No student is allowed to use a power tool without first being trained on how to safely use it. A safety addendum is available at the end of the handbook with specific safety rules.
- **Workshop Cleanliness:** No cups are allowed in the workshop, only *closed-lidded* bottles. Clean up after yourselves. This includes cleaning up your dishes after team meals, logging out of computers, cleaning machines, putting away tools and materials, and sweeping the floor and worktables after working in the shop. (Do this even if you're not the last to leave!)
- **Dress Code:** Team members must adhere to the dress code in the addendum at back of the handbook. For safety, long pants, closed toe shoes and safety glasses are always worn in the workshop.
- **Dating:** It is highly recommended that students on the team not date within the team. Dating creates awkward situations both during the relationship and when it ends. Students who choose to date should notify the Coaches early on. It's better to be open and upfront than to try to sneak around and hide it. They are expected to "leave the relationship at the door." This means no PDA, no holding hands, no sitting on each other's laps, showing preference, sneaking off to be alone, etc. Teammates who choose to date may not be put in positions where they will have to work closely together (ex: drive team and/or pit crew). This is to protect the best interests of the team and prevent awkward or uncomfortable situations for other students on the team.

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There are certain behaviors that are unacceptable as Howdy Bots. Though we don't expect that these behaviors will occur, we feel it is necessary to be very clear about them:

- **Students will not display violent, harmful, or abusive behavior, whether it is directed at other students, mentors, coaches, the public, the facilities or themselves.**
- **Students will not use or bring tobacco, alcohol, or illegal drugs. They will use prescription drugs or over-the-counter drugs only in ways prescribed and will communicate with the mentors and coaches when doing so.**
- **Students will listen to the “mentor override” of mentors and coaches and follow it. If students are unable to do this, it puts them and others at risk.**

## 10. DISCIPLINE AND DISMISSAL POLICY

If students don't follow the behavior rules, mentors and coaches will determine what discipline option best fits the circumstance. The following is a list of possible options that mentors and coaches will use. The first two options will always be incorporated-- ranging from a gentle reminder like a hand on a shoulder, to a heart-to-heart conversation, or, if needed for safety, mentors and coaches may need to simply say, "Stop!" Mentors and coaches commonly strive to co-create solutions with students, but in some unusual cases (when physical and/or emotional safety is at risk) a decision may not be open to negotiation (though we will be willing to hear the student's perspective afterward). Respect, understanding, and communication will be priorities in all situations.

### **Mentor/Coach responses to student behavior when a rule is broken:**

(listed from gentlest to most severe)

1. Remind student of the rules.
2. Support the student in shifting their behavior.
3. Ask the student to step out of the shop or to go for a walk until calm.
4. Contact parent after meeting. (Parents often can help mentors/coaches and students understand each other more fully.)

### **If needed for safety or to maintain a healthy learning environment for all, Howdy Bots reserves the right to:**

5. Call the parent during the meeting to pick up their student.
6. Ask the parent (non-mentor) to attend meetings with their student.
7. Ask a student to "take a week off".
8. Dismiss the student from the team. --This would occur only if the previous steps are not effective or if a very serious infraction occurs.

Though it is rare for the Howdy Bots to have serious behavior or discipline problems with a student, it is necessary for us to let families know about our dismissal policy in the unlikely event that we do encounter difficulties.

## 11. CONFLICT RESOLUTION

When any group of people gathers around a goal, there may be some disagreements and awkward moments. Many of these can be properly resolved by overlooking small offenses and forgiving the person who offended. Because of this, we ask that you reflect about the issue to decide if it is important enough to address. If, after reflection, you have the peace to dismiss the issue, then it is passed and forgotten. The goal is positive progress, forgiveness, and friendship. If, however, you feel the offense must be addressed, the following guidelines have been established:

1. The offended should seek to resolve the conflict between only the individuals involved. This means to admit what parts of the conflict are caused by each party, apologize and seek forgiveness. Real forgiveness is when you promise those involved to think charitably about them, to not bring up the matter again to be hurtful, to not gossip about them, and to resume the friendship enthusiastically. This should be done in a timely manner, preferably within 24 hours.
2. Should the offended party feel threatened or unable to personally address the issue, they may seek the assistance of a mentor or coach to mediate between the individuals. Parents of student members involved may also be asked to help with the mediation.

When working through conflict, we are always mindful of the Howdy Bots Values and Guidelines as presented earlier in the handbook.

The coaches and mentors seek transparency and to the best of our judgment, inclusiveness, in deliberations. Confidentiality sometimes trumps transparency. Time sometimes stumps our efforts. But in general, we want everyone to have input on issues that affect them. If you find yourself disagreeing with a decision made at Howdy Bots, our mentors and coaches are committed to hearing you dissent with a peaceful and compassionate ear and working toward understanding.

**At no time should these conflicts or the mediation thereof be discussed with other individuals who are not directly involved in the conflict or the mediation.** The coach or mentors, at the coach's discretion, will provide any counseling required to the student members. Student members should not take it upon themselves to provide counseling to other student members.



## 12. PARENT INVOLVEMENT

Parents/guardians are an integral part of our team and important to our success. The team becomes like a family throughout the year because the members spend so much time together. Having the involvement of our parents only enhances this experience.

Parents may offer assistance, but should recognize that approved and pre-screened mentors are placed in positions of expertise and parent “help” can quickly turn into interference. So use of discretion is encouraged. If you are interested in becoming a team mentor, please see the head coach for a mentor packet and application.

The Howdy Bots meetings are a “drop off” activity. We welcome occasional visits and observations by parents, but please understand that we are very space constrained and spectators can quickly get underfoot. Due to space and safety concerns, additional kids are not allowed at meetings without the expressed approval of the coaches.

Other ways parents/guardians are important to our team include:

- **Timely Transportation:** Please be on time for drop off and pick up of your student. If a student has to come late, they should let the team know via Slack as soon as possible. At the end of the meetings, team coaches/mentors will wait with the students until they are picked up, so please be respectful and arrive on time.
- **Meals/snacks:** All parents are expected to help out with providing meals and snacks during Build Season. Coaches/mentors and students work very hard during this time, and it is important for them to be well nourished. The mentors are providing their time and expertise on a volunteer basis – a tasty meal is a wonderful “thank you” for the effort they put in. Meals can be very simple (like spaghetti, subs, or pizza) or as elaborate as you may want. You will receive full information by email in December so that you can sign up for the meal(s) you’d like to provide.
- **Supporting your child, respecting the team, its mentors and its sponsors:** It is important that parents are respectful of the team and its goals. Collectively, the team's coaches and mentors spend countless hours working with the team and preparing behind the scenes. While you may not always agree with some of their decisions, please trust that they have the best interests of your child and the team in mind.

In addition, remind your child that it's important to actively participate. When first joining the Howdy Bots they'll find new people, new things, new rules, etc. All this can be pretty intimidating to a new member. The Howdy Bots are going to push students out of their comfort zone from time to time. It's important that you encourage your child to embrace these new experiences rather than run from them.

Parents should keep in mind that Howdy Bots isn't for everyone. Some students don't like the team aspect, some don't like competition, some just aren't open to STEM or robotics, etc. It's important not to force your child to stay on the Howdy Bots team if they're truly not interested. This doesn't mean they're not a fit for STEM or robotics, maybe it's just not right for them at the moment, but it's not fair to them, the mentors, the coaches or the rest of the team to force them to keep attending.

In a similar vein, Howdy Bots cannot be all things to all people. The Howdy Bots have established a very particular culture in which mentors and students collaborate. We work

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very hard to maintain a positive and enriching teaching environment where teens learn from experienced adults and they work together to achieve team goals.

We are neither an “unschooling” team, nor a “classical” college-preparatory team, nor do we follow any other particular homeschooling philosophy. Our team members come from varying backgrounds including: different religious and political views, different parenting styles and educational philosophies, we include private schoolers, public schoolers and homeschoolers, and we have different family make-ups. While at Howdy Bots, team members and their parents are expected to conform to the Howdy Bots non-discriminatory, collaborative culture. This extends to supporting sponsors you may not agree with – or at least keeping your current views about them private.

- **Contacting Coaches and Mentors:** During our most active seasons, if you want to speak to a coach or mentor, the best time to reach them is immediately after meetings. We find email to be an effective way to relay information or to schedule a conversation, but experience tells us email is not as effective for addressing topics that are worthy of dialog (especially relating to any topic that is attached to emotions like frustration or anger.) Coaches and mentors are available for spontaneous or pre-scheduled conversations in the 20 minutes after meetings end, or at other times upon request.

If you have information to relay to the coaches or mentors that has to do with that day of meeting, please let them know at drop-off. Also, be aware that at drop-off, coaches and mentors are taking on the responsibility for many students and trying to begin the meeting on time, thus they might not be as available to connect, as they would be after the meeting.

Please note that the coaches and mentors *always* want to hear your concerns. However, we must state openly that we expect parents to bring concerns to the Head Coach earlier, rather than later, at appropriate times (not publicly in the middle of a meeting or on a group-wide Slack channel) and in a respectful, mature way. Concerns need to be voiced to only the parties concerned. If you have any questions or concerns about the team or your child, please bring them to the attention of the Head Coach ASAP so they can be addressed and not compounded into larger issues. Please respect the fact that the coaches and mentors are not trained teachers in your employ, that they are volunteering their personal time as well as personal resources while either working full-time jobs or homeschooling their own children. We will not tolerate destructive adult drama, malicious gossip, or repeated fomenting of drama. Parents who are not willing to speak directly, respectfully or at an appropriate time to the Head Coach, or who are unable to communicate with the team leadership in a mature and professional manner *jeopardize* their child's continued participation on the team.

- **Financial Support:** Monetary donations above and beyond the annual dues are another way parents can help! Your tax-deductible donation will help pay for the purchase of robot parts and materials, tools, and competition-related expenses. Individual contributions, matching funds from an employer, in-kind donations, or corporate sponsorships are all welcome. Please contact the Head Coach for more information.
- **Competitions:** We encourage the entire family to attend competitions, both in and out of Austin. This includes siblings, parents, grandparents and friends. Competitions are free to attend. Whenever you are representing the Howdy Bots team, whether it be wearing a fan t-shirt or visiting the pit during competition, all attendees are expected to model Gracious Professionalism at all times.

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## 13. CALENDAR AND SCHEDULE

<b>September, 2017</b>	<ul style="list-style-type: none"> <li>• <i>FIRST</i> releases its calendar of events and other competition information.</li> <li>• Seasonal team organization begins.</li> <li>• Meetings every Saturday, 1:00 PM to 5:00 PM (times subject to change)</li> </ul>
<b>October-December, 2017</b>	<ul style="list-style-type: none"> <li>• Weekly team meetings will be held at the workshop. Sub-team meetings, outreach, and other group sessions as scheduled as needed. The Google calendar and Slack meeting notices are regularly updated.</li> <li>• Meetings every Saturday, 1:00 PM to 5:00 PM (times subject to change)</li> <li>• Local off-season competitions: The Robot Remix 2017 – The Woodlands: October BatBots 2017 (tentative) – Westlake HS: November</li> </ul>
<b>January 6, 2018</b>	<i>FIRST</i> Kick-off: (at a local high school) - Members of the team will join other Austin area teams for a “watch party” and “parts pickup.”
<b>January 6 – February 20, 2018</b>	<ul style="list-style-type: none"> <li>• 2018 Build Season</li> <li>• Work sessions and meetings daily: Monday - Friday, 6:30 PM to 9:30 PM (times subject to change) (usually have at least one weekday off) Saturday &amp; Sunday: 10:00 AM to 9:00 PM (times subject to change)</li> <li>• Robot reveal party for friends, family &amp; sponsors</li> </ul>
<b>February – April, 2018</b>	<ul style="list-style-type: none"> <li>• Work sessions and meetings (days/times subject to change): Wednesday, 6:30 PM to 9:30 PM Saturday &amp; Sunday, 1:00 PM to 6:00 PM</li> <li>• <i>FIRST</i> Regional Competitions (TBD) (Typically Wednesday evening through Saturday evening.)</li> </ul>
<b>Late April 2018</b>	<ul style="list-style-type: none"> <li>• <i>FIRST</i> World Championship GRB Convention Center and Minute Maid Park, Houston, TX (Wednesday evening through Saturday evening.)</li> </ul>
<b>May 2018</b>	<ul style="list-style-type: none"> <li>• Post-season team celebration and rest</li> <li>• Maker Faire demo; no other fundraisers or outreach events</li> </ul>
<b>June – August, 2018 (off season)</b>	<ul style="list-style-type: none"> <li>• Summer activities include training, community outreach, and corporate fundraising</li> <li>• Meetings Every Saturday, 1:00 PM to 5:00 PM (times subject to change)</li> <li>• Off-season competitions: TRI (Texas Robot Invitational) – Houston: Late June TRR (Texas Robot Roundup) – Austin: Late July</li> </ul>

## 14. FRC “SEASONS”

The Howdy Bots are busy throughout the entire year! This quick, at-a-glance view of the “seasons” will give students a better understanding of the commitment level needed during the year.

### **Summer**

Time commitment: approximately 5 hours/week

Summer is a time for mentors and team members alike to take a deep breath and celebrate a previous years' job well-done! But while we slow down, there is still much to do. The team spends much of the summer securing funds for the next season (grants, sponsorships & donations), and holding outreach and recruiting events. We also use this time for things like mentor planning meetings, seminars, fun team building activities, off-season competitions and fundraisers.

### **PreSeason (Fall)**

Time commitment: approximately 10 hours/week

With the beginning of the academic school year, the Howdy Bots start gearing up as well! New recruits are welcomed and oriented on the tools and software, students discuss and decide their governance, we continue to participate in off-season competitions, and everyone gets a chance to practice driving last year's robot! Fundraising, outreach, marketing, planning and fun team-building activities continue.

### **Build Season – 6 Weeks (Winter)**

Time commitment: approximately 30+ hours/week

Hold on to your hats and fasten your seatbelts! Build season is an intense ride! The season starts on the first Saturday of January with an official Kick-off event hosted at a local high school. On this day FRC teams all around the world learn the competition game scenario and rules for the upcoming season. With only six short weeks to design, build, and program a full-scale, 120lb+ robot, this becomes like a full time job for the team. We even eat meals at the shop so we can keep working!

This is the Howdy Bots' busiest time of the year, and there will be both students and mentors working tirelessly every day to ensure the robot is in peak condition for competition season. We typically meet 4 nights per week and all day Saturday and Sunday – sometimes until 10:00pm at night. Business activities continue alongside the Engineering activities.

### **Competition Season (Spring)**

Time commitment: approximately 20 hours/week + competitions (3-4 nights in a hotel per event)

Competition Season is approaching the finish line for our hardworking team. We are busy, still meeting multiple times a week, but not as intense as Build Season. We choose the drive team if not already chosen, programmers put finishing touches on code, and every hand is put toward tying up loose ends. Sub-teams often meet separately.

Just as a sports team practices between games, so do the Howdy Bots. Like many teams, we build a second, “practice” robot that is used between competitions to train the pit crew and drivers, as well as test and implement improvements.

We travel as a team to competitions. Regional competitions are three days long. We typically arrive Wednesday afternoon so we can load-in and set up our pit (a 10' x 10' booth where we fine-tune our robot between events.) Thursday is a practice day in which the team will practice driving the robot and make any necessary improvements or last minute adjustments. All day Friday and half of

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Saturday are for the qualification matches, which determine team rankings. After qualification matches, the top teams select other teams to be on their alliances for the elimination matches which take place Saturday afternoon. Awards are given out following the elimination matches.

The three days of each competition can feel like a *true* rite of passage--- in every good sense of the concept. The students are asked to work very hard on very little sleep and with long stretches between an early lunch and a late night dinner (although we bring lots of snacks). The exhilaration of each match fuels the team on, and after the end of each competition, students are even more connected as a team. Competitions are truly character building: from facing both defeat and victory with humility, to collaborating with other teams and talking to judges with confidence, students are asked to give the team all they've got during those three days.

The Howdy Bots typically attend two regional competitions in March/April. If we are fortunate enough to attend the championship, it will be in Houston at the end of April.

## 15. SUB-TEAMS

Prior to Build Season team members will sign up for various sub-teams. As the sub-teams divide and conquer, they are also tasked with communicating and working together to get the job done. It is not uncommon for team members to join multiple sub-teams, or to switch teams mid-season.

**Mechanical (Build Teams):** The Mechanical sub-teams are responsible for building the physical body of the robot. During the build season, the teams fabricate (measure, cut and bend) all the parts and assemble them to make the final robot. Mechanical team members learn how to use a wide range of tools during the build season. During competitions, the mechanical teams are responsible for keeping the robot running.

**CAD:** A good robot design is carefully thought out and drafted on the computer with Computer Aided Design (CAD) software. This enables the team to calculate changes prior to making them, accurately measure parts, and print models to put in their engineering notebook to share with the judges at competitions. CAD training is done in the off-season and these sub-team members are typically busy all year.

**Electrical:** The Electrical sub-team is responsible for the electronic layout, wiring design and sensors on the robot. In order to do so effectively, team members acquire a firm understanding of both basic and advanced electrical principles, ranging from Ohm's law to understanding the functioning of circuit board components. The electrical team strives to provide a neat, organized, snag-free, and self-contained electrical configuration with simple connections to the rest of the robot wiring.

**Programming:** The Programming sub-team is responsible for a variety of software projects, both on and off the robot. The team writes and implements algorithms to control the robot, in both a user-operated mode and an autonomous mode. In preparing the robot code, the team works closely with the electrical team to ensure that inputs and outputs are properly utilized in the software. These sub-team members are exposed to the LabVIEW programming languages and structures, but also have the opportunity to use C/C++, Java, HTML, CSS, JSP, SQL, and PHP if desired.

**Marketing:** Our Marketing sub-team posts regularly on social media, maintains the website and blog, and produces marketing materials such as brochures, banners, photo slide shows and videos. This team also manages the Howdy Bots brand and oversees all documents produced to maintain a consistent image. In addition to marketing, this sub-team also organizes our outreach efforts including community events to spread the message of *FIRST* and robotics, and recruiting events for potential new members.

**Business:** The Business sub-team is responsible for fundraising, budgeting and accounting. Fundraising efforts includes gathering and contacting sponsors, organizing fundraising events, filling out grant applications, and staying in touch with our sponsors. Throughout the season and summer months, this group will learn how to set up accounting balances, create worthwhile presentations, conduct phone interviews, and conduct general business.

## 16. COMPETITION TEAMS

**Drive Team:** The Drive Team will be determined (ideally) during the middle of the build season and will be based on a number of tasks, including a test on game rules, a driving obstacle course, and other challenges the mentors and coaches deem applicable. All team members will have the opportunity to participate in preliminary tryouts.

The Drive Team is typically made up of four positions as outlined below:

- Driver: The Driver is responsible for driving the robot on the game field.
- Operator: The Operator assists the Driver and may control manipulators on the robot.
- Human Player: The Human Player is responsible for retrieving and returning game elements through mechanisms provided by game field. The exact role is modified every year according to the game rules.
- Coach: The Coach, typically an adult mentor, is responsible for being the “eyes of the match” and directing the Driver, Operator, and Human Player through an adaptive strategy all while monitoring the time, the score, and the actions of other robots.

During tryouts, coaches watch the candidates through practices and trials to assess communication skills and the ability to drive/operate successfully. We also routinely pair up different driver/operator combinations until we have come up with the combination of people that we believe will work the best. These trials are specifically designed to display the abilities and skills of all the candidates and simulate how they would perform under real match conditions/scenarios. Since the Drive Team IS a team, we will select students for positions based on their ability to work well with each other as well as their objective skill. Teamwork, communication, and demonstrated leadership are key here.

Drive Team members are responsible for:

- Attending all scheduled practices between and during competitions.
- Attending all of the Howdy Bots competitions.
- Maintaining a high level of dedication to the team.
- Having a complete understanding of *FIRST*’s rules and regulations to minimize errors and penalties during competition.
- Listening to their coach’s instructions and following through – both during the match and off the field.

**Pit Crew:** Members of the Pit Crew troubleshoot various aspects of the robot during competition events. This crew will stay in the pit area as necessary. The pit crew is also responsible for speaking with judges at competitions when they approach the pit. Each pit crewmember should be able to specifically describe various aspects of the robot, and what the robot does on the game field. The pit crew should also have knowledge of the team’s off-season events, fundraisers, and outreach activities. Since we never know which judges will visit the pit, all members of the pit crew should know the business plan, safety procedures, and details about the robot.

Criteria for being selected to be a member of the pit crew includes, but is not limited to: the drive team, the safety captain, sub-team leads, and possibly students who have demonstrated exceptional knowledge during the engineering and building of the robot.



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**Scouting Team:** Scouting is the important practice of observing and recording data on other robots in a competition to learn their strengths and shortcomings. That information is then used to aid the drive team in entering a match well-informed about their partners and opponents. It is also compiled into lists and other formats to aid our alliance in selecting partners for the elimination rounds.

There are three main types of scouting that this team will be responsible for:

- Pre-Competition Scouting: The collecting of info before events on competing teams, including their strategy, robot, Win/Loss ratio, etc.
- Pit Scouting: This allows teams the chance to explain their robot and strategy themselves. Pit scouting generally includes talking to teams in their pits personally, so as to get to know their robot and members.
- Match/Alliance Scouting: This includes collecting stats on other teams as they play qualification matches. Things like number of gears collected, penalties, speed and efficiency, etc.

Scouting is an important part of the competitions we attend. Team members (regardless of their position on the team), parents, mentors, and supporting fans may all be asked to pitch in and help collect match data from the stands.



## 17. STUDENT LEADERSHIP

There are lots of opportunities for students to gain leadership skills on the Howdy Bots. From leading an individual project to leading an entire sub-team, there's something for everyone. Some of these opportunities happen organically while some are more formal, elected positions.

The leadership of the Howdy Bots is and will continue to be a cooperative effort between mentors and student leaders. During the 2018 season, we will be reviewing and modifying our leadership roles and processes as we strive to find the right fit for our team.

## 18. SOCIAL MEDIA, PHOTOS, PUBLICATIONS

Being active on social media helps our team attract sponsors, recruit new members, interact with other teams, and keep family and friends up to date on our team progress. We pride ourselves on having a strong social media presence. This means we take a lot of photos! All team members will be required to sign a Media Release document at the beginning of each year. Team photos may also show up in printed materials such as brochures and fliers, or on our website or blog.

Here is a list of our team's social media pages. Bookmark and share our links, follow the team, and join in the fun!

- Website: <http://howdybots.org/>
- Facebook: <https://www.facebook.com/FRC6377/>
- Twitter: <https://twitter.com/howdybots6377>
- YouTube: <https://www.youtube.com/channel/UC5aFAr67BcAdLpwfm2cRPAg>
- Instagram: <https://www.instagram.com/howdybots/>

To maintain the team's high standards of quality and imagery, the marketing team and mentor must approve any documents or media pertaining to the team prior to their release. This includes grant applications, award submissions, publicity materials, news articles, pictures, videos, and posts to social media or discussion forums.

When posting about the Howdy Bots on your own personal social media pages, team members and parents are expected to conduct themselves with Gracious Professionalism. When you speak as a member of the Howdy Bots, you must speak respectfully. No member of the Howdy Bots, adult or student alike, is permitted to post threatening, harassing, illegal, obscene, defamatory, slanderous, or hostile posts towards any individual or entity, nor to share information that violates the privacy of another person.

## 19. HEALTH POLICY

### **Medical Forms and Emergency Response:**

Each team member is responsible for completing the Howdy Bot Medical and Release Form **prior** to attending our meetings. Full disclosure of issues affecting your participation or interactions with the rest of the team is required and important to your safety and the well-being of the team. In the event of an emergency, forms are consulted and the coaches and mentors will follow the team's Emergency Response Plan.

Please be sure to return your Medical & Release Form on or before the first meeting attended.

### **Health / Illness Guidelines:**

We work in close quarters and it's easy for germs to get passed around. In the past, FRC teams have had illness take down the whole team, putting them several days behind schedule during Build Season. Please be respectful of others and stay home if you are sick. Students who come to robotics sick may be sent home or asked to wear a mask. If a student or adult has had any of the following symptoms within 24 hours he/she should not come to meetings:

- Fever
- Vomiting
- Diarrhea
- A communicable disease (e.g. chicken pox)

The Head Coach should be notified when you or anyone in your family has a communicable disease other than a cold so others can be aware and alert to symptoms.

### **Illness & Emergency Response Plan:**

If a student becomes ill or injured at a team meeting or event and is unable to contact a parent themselves, a designated adult will call a parent or the emergency contact listed on the student's Medical Forms so they can be picked up.

*Even if a student is not able to make a scheduled meeting, he/she is encouraged to work on anything they can at home.*

## 20. NON-DISCRIMINATION POLICY

Howdy Bots does not discriminate on the basis of race, color, national or ethnic origin, religion, disability, sex, sexual orientation, gender identity and expression, veteran status or any other characteristic protected under applicable federal or state law. However, in some cases Howdy Bots may not be able to meet the special needs of each child. In this case, the student will be evaluated individually and it will be determined if Howdy Bots is a good fit for the child.

## APPENDIX 1. DRESS CODE

**Workshop Dress Code:** The Workshop Dress Code is important for physical safety while working in robot construction areas. It applies to everyone in the shop and work area – parents included. Students who are not dressed appropriately for participation will be asked to return home to change before they can participate.

- Eye Protection – Safety glasses must be worn ***at all times*** while in the Howdy Bots workshop. The team provides safety glasses, though you may want your own personal pair.
- Long Pants – Jeans are recommended
- Closed Toe Shoes – Tennis shoes or boots preferred. No crocs or sandals.
- Long Hair Pulled Back and Secured – Long hair can easily be caught in spinning power tools. Nobody wants to be scalped!
- Additional Protection As Required – Team members may be required to wear gloves, face masks, or ear protection during certain tasks. These will all be provided by the team.
- Family Friendly Attire – Clothes must not have profanity or vulgar statements.
- Consider Wearing Older Clothes – You might get dirty!

**Public Event Dress Code:** Public events include fundraisers, demonstrations, recruiting and outreach activities, and competitions. When we are at these public events we wear:

- Team Shirt – this will be provided by the team
- Long Pants - Jeans or khaki pants
- Closed toe shoes – Tennis shoes or boots
- Other as deemed necessary or appropriate by the coaches or mentors.

## APPENDIX 2. SAFETY RULES

A student **Safety Captain** will be designated each year. This Safety Captain will be responsible for making sure that everyone follows proper safety procedures. Please be aware of these safety rules:

- Act in a responsible manner at all times in the building and construction areas. Each student must consider it their duty to protect themselves and their peers from accidents and unsafe behavior. *Horseplay and goofing around are not tolerated.*
- Wear eye protection at all times when working with hand or power tools or working anywhere near someone who is using hand or power tools.
- Tie back long hair, remove dangling jewelry, secure loose clothing, and wear shoes with closed toes in the construction areas.
- Never use a power tool without direct coach, mentor, or Howdy Bots approved staff supervision.
- Students will be respectful of the Safety Captain and mentors, and adhere to any reasonable requests they make.
- Parts being machined need to be well-secured with a vise or clamps.
- No student should ever operate a machine when another student is standing too close.
- Do not distract or startle the operator of any machine. Wait until they are finished using the equipment.
- Always use the correct tool for the job being done.
- Batteries on the robot should always be disconnected during maintenance or repair.
- When the robot is running, everyone in the area should have an elevated sense of caution and someone must be ready to power off the robot, especially when testing autonomous modes. The magic words to stop the robot are “STOP STOP STOP!” or “HOLD HOLD HOLD!”
- All tools are to be treated with care.
- Know where a first aid kit is located and what should be done in an emergency. Report all injuries to the Safety Captain.
- Immediately report any unsafe condition or activity to a coach and/or mentor. If a power tool malfunctions or breaks, report it to a mentor immediately.
- Electrical devices must never be powered by daisy-chaining cords or power strips.
- Any and all unsafe behavior will receive one warning. After one warning, if the behavior continues, appropriate disciplinary measures will be taken.

All team members will be working on the robot. This necessitates a working knowledge of tools that are used in the shop. All students, new and returning, are required to receive 100% on a Tool Test. The Tool Test is viewed as a learning tool, and everyone will be allowed to take it as many times as needed until they pass. Regardless of how a particular student participates on the team, they must be familiar with and know how to use all of the tools and machinery in the shop.

## Special Thanks

Howdy Bots unashamedly plagiarized all the best parts in this handbook from many other role model FRC Teams and organizations. Howdy Bots would like to send out a BIG THANKS to:

Team 1816 The Green Machine  
Team 4643 Thunderbird Robotics  
Team 3528 UpNext  
Team 4293 Team Komodo  
Team 1538 The Holy Cows  
Team 624 Cryptonite  
Team 4499 Highlanders Robotics  
Team 2177 Robettes  
Team 1511 Rolling Thunder  
Team 1923 The Midnight Inventors  
Team 254 The Cheesy Poofs  
Team 3928 Team Neutrino  
Team 1111 Power Hawks  
Earth Native Wilderness School

## About ATX Robotics

ATX Robotics, Inc. is a non-profit organization dedicated to providing quality extracurricular programs designed to foster interest and promote education in science, technology, engineering, art and mathematics (STEAM) in students of all ages. Our mission is to unite students, teachers, parents and private contributors to encourage intelligent, innovative, and collaborative activities in young people.

The main program of ATX Robotics is to support the “Howdy Bots” robotics team, a group of students competing in the annual *FIRST* robotics competition and participating in local robotic events. ATX Robotics, Inc., hopes to sponsor FLL Jr., FLL, and FTC teams for the homeschool community in the future. Please contact ATX Robotics President Evan Marchman, if you are interested in starting a team.

<http://www.atxrobotics.org/>

# HOWDY BOTS

## ATTACHMENTS

Please note that all forms must be completed as-is. We will not accept 'redlined' or edited forms.

The following forms must be completed and signed to participate with the Howdy Bots:

- Handbook Acknowledgement
- Member Application
- Liability Waiver
- Tool Safety Agreement
- Media Release
- Travel Release
- Medical Release

In addition, members will be required to register online with *FIRST* and complete the *FIRST* waiver. Links and information will be provided once you have joined the team.

### Handbook Revision History

v2018-1.1 – Updated team meeting times and season calendar with official 2018 dates.

v2018-1.0 – Initial Release.