

PUBLIC RELEASE

# The RoboBees

## What is FIRST and FRC?

FIRST (For the Inspiration and Recognition of Science and Technology) is an organization committed to changing our culture to further the recognition of Science, Technology, Engineering, and Mathematics (STEM) in popular culture. The FIRST website for all its associated programs can be found at [www.firstinspires.org](http://www.firstinspires.org).

One of the major programs in FIRST is the FIRST Robotics Competition (FRC). Combining the excitement of sports with the rigors of science and technology, we call FRC the ultimate sport for the mind. High-school students call it “the hardest fun you’ll ever have.” Under strict rules, limited time, and resources, teams of students are challenged to raise funds, design a team “brand,” hone teamwork skills, and build and program industrial-sized robots to play a difficult field game against like-minded competitors. It’s as close to real-world engineering as a student can get. The RoboBees are growingSTEMS’ well-known and successful FRC Team in the Chesapeake District area, which encompasses Maryland, Virginia, and DC.

Every year, our mentors donate an estimated 18,000 hours to the students of our organization. Our objective is to inspire our community to celebrate science, technology, engineering and mathematics by teaching skills related to STEM careers in a fun environment and providing an opportunity to apply this knowledge.

Treated as a varsity level team in the growingSTEMS portfolio of programs, FRC Team 836: The RoboBees is made up of approximately 30 students. Admission to the team is prioritized to returning students in good standing with the team, followed by returning VEX IQ team students moving up in age group, and finally, new students who apply during the open enrollment meeting. Students joining this team will be asked to focus on technical areas (i.e. Mechanical, Media, and Command & Control) by joining a subteam. Each subteam has a limited number of students that it can support. Students wishing to join a subteam will be given the same priority as listed above with the exception that students returning to that sub-team have the highest priority.

## Team History

FIRST® Team 836, The RoboBees was founded in October of 2001 with 11 eager students and one dedicated mentor. Since then, our team has more than doubled in size. We strive to give every student a hands-on experience to learn engineering and life skills while enjoying the best FIRST® experience possible. We are based out of the Hive, a growingSTEMS center, located in Hollywood, Maryland. Our mentors are primarily engineers, scientists, and business professionals based out of the Patuxent River Naval Air Station, a major engineering naval base located at the southern end of St. Mary’s County. Our county is a diverse community composed of a mixture of military, contractors, and farmers.

As our community looks to increase its involvement in technological development, The RoboBees play

a vital role in providing the next generation of STEM innovators and leaders by fostering excitement in students for STEM. At the Tech Expo in 2015, hosted by the Patuxent Partnership and Naval Air Warcraft Center - Aircraft Division (NAWCAD), the Commander of NAWCAD, Rear Admiral G. Dean Peters said that STEM organizations, such as The RoboBees, were essential to the future mission of the Navy in general, and NAWCAD in particular. His words reinforce our belief that our mission and vision is so important.

The RoboBees are a preeminent team in the Chesapeake District. We serve as an example of a team that others aspire to be. Over the past 25 years, the team has won nearly 70 awards for team and robot performance. A listing of our awards can be found below.

| <b>Award</b>                           | <b>Year</b> | <b>Competition</b>               |
|----------------------------------------|-------------|----------------------------------|
| Leadership in Control Award            | 2003        | Chesapeake Regional              |
| RadioShack Innovation in Control Award | 2005        | Chesapeake Regional              |
| Judge's Award                          | 2007        | Chesapeake Regional              |
| Motorola Quality Award                 | 2008        | Chesapeake Regional              |
| Team Spirit Award                      | 2010        | Chesapeake Regional              |
| Regional Chairman's Award              | 2011        | Chesapeake Regional              |
| Regional Finalist                      | 2011        | Chesapeake Regional              |
| Website Design Award                   | 2012        | Chesapeake Regional              |
| Motorola Quality Award                 | 2012        | Washington D.C. Regional         |
| Regional Finalist                      | 2012        | Washington D.C. Regional         |
| Regional Chairman's Award              | 2012        | Chesapeake Regional              |
| Entrepreneurship Award                 | 2013        | Palmetto Regional                |
| Regional Finalist                      | 2013        | Palmetto Regional                |
| Regional Chairman's Award              | 2013        | Palmetto Regional                |
| Engineering Excellence Award           | 2013        | Washington D.C. Regional         |
| Motorola Quality Award                 | 2014        | North Carolina Regional          |
| Regional Finalist                      | 2014        | North Carolina Regional          |
| Engineering Inspiration Award          | 2014        | Greater Pittsburgh Regional      |
| Regional Winner                        | 2014        | Greater Pittsburgh Regional      |
| Engineering Excellence Award           | 2014        | FIRST® Championship              |
| Regional Chairman's Award              | 2015        | Palmetto Regional                |
| Creativity Award                       | 2015        | Chesapeake Regional              |
| Regional Finalist                      | 2015        | Chesapeake Regional              |
| District Event Winner                  | 2016        | Greater DC District Event        |
| District Event Winner                  | 2016        | Central Maryland District Event  |
| Engineering Inspiration Award          | 2016        | Central Maryland District Event  |
| District Championship Winner           | 2016        | Chesapeake District Championship |
| Engineering Inspiration Award          | 2017        | Northern Maryland District Event |
| Entrepreneurship Award                 | 2017        | Chesapeake District Championship |
| Excellence in Engineering Award        | 2018        | Central Maryland District Event  |
| District Event Finalist                | 2018        | Central Maryland District Event  |
| Innovation and Control Award           | 2018        | Central Virginia District Event  |
| Industrial Design Award                | 2018        | Chesapeake District Championship |
| District Event Winner                  | 2019        | Owings Mills District Event      |
| Autonomous Award                       | 2019        | Oxon Hill District Event         |

| <b>Award</b>                         | <b>Year</b> | <b>Competition</b>                    |
|--------------------------------------|-------------|---------------------------------------|
| Autonomous Award                     | 2019        | Chesapeake District Championship      |
| Autonomous Award                     | 2020        | Haymarket District Event              |
| Autonomous Award                     | 2021        | Helium Group At Home Challenge        |
| Skills Competition Finalist          | 2021        | Helium Group At Home Challenge        |
| Digital Animation Award Finalist     | 2022        | FIRST® Championship                   |
| District Event Winner                | 2022        | Greater DC District Event #1 Day 1    |
| Excellence in Engineering Award      | 2022        | Greater DC District Event #1 Day 1    |
| District Event Winner                | 2022        | Greater DC District Event #3 Day 1    |
| Autonomous Award                     | 2022        | Greater DC District Event #3 Day 1    |
| District Championship Winner         | 2022        | Chesapeake District Championship      |
| Judge's Award                        | 2022        | Chesapeake District Championship      |
| Innovation in Control Award          | 2022        | FIRST® Championship Roebling Division |
| Digital Animation Award Winner       | 2023        | FIRST® Championship                   |
| Safety Animation Award Winner        | 2023        | FIRST® Championship                   |
| District Event Finalist              | 2023        | Bethesda District Event               |
| Quality Award                        | 2023        | Bethesda District Event               |
| District Event Winner                | 2023        | Timonium District Event               |
| Team Sustainability Award            | 2023        | Chesapeake District Championship      |
| Autonomous Award                     | 2023        | FIRST® Championship Galileo Division  |
| Championship Division Finalist       | 2023        | FIRST® Championship Galileo Division  |
| Creativity Award                     | 2024        | Ashland District Event                |
| District Event Finalist              | 2024        | Owings Mills District Event           |
| Creativity Award                     | 2025        | Portsmouth District Event             |
| Engineering Inspiration Award        | 2025        | Alexandria District Event             |
| District Event Winner                | 2025        | Alexandria District Event             |
| District Championship Finalist       | 2025        | Chesapeake District Championship      |
| Excellence in Engineering Award      | 2025        | Chesapeake District Championship      |
| District Event Finalist              | 2026        | Pasadena District Event               |
| FIRST Leadership Award Semi-Finalist | 2026        | Pasadena District Event               |
| Engineering Inspiration Award        | 2026        | Pasadena District Event               |
| District Event Winner                | 2026        | Severn District Event                 |
| District Championship Winner         | 2026        | Chesapeake District Championship      |
| Excellence in Engineering Award      | 2026        | Chesapeake District Championship      |
| Championship Division Finalist       | 2026        | FIRST® Championship Johnson Division  |

## Season Breakdown

growingSTEMS begins its fiscal and operational year on July 1st and ends its year on June 30th. This was selected to generally align with the academic calendar as well as cleanly splitting the calendar year in half during the summer.

## Summer Offseason

After the team has finished with official competitions for the year, students and mentors focus our

efforts on our community outreach programs. We hold community events every year and impact thousands of other individuals. These outreach efforts are a large part of the success of our program. We hold events year-round, but the majority of them are throughout the summer and fall months.

Summer is used for preparing for the upcoming season.

## Fall Offseason

During the preseason R&D session, our team is training students on all aspects of robot design. We also spend that time developing new concept ideas for possible future use on competition robots.

During this period, every student goes through various training activities designed to teach and reinforce instruction of team organization, the FIRST Robotics organization, robot systems, the engineering design process, and shop safety.

## Build Season

The build season takes place in January and February. The FRC kick-off, which generally takes place on the first non-holiday Saturday in January, is when the annual game is unveiled to the world. On this day all FIRST teams learn what the game is about, how it is played, and what the rules are. This is all detailed in a very long game manual released to the teams. The game manual for the 2025-2026 season can be found [here](#).

Once the game has been announced, every team around the world starts scrambling to learn the game and design, build, and test that robot. The aim is to complete this process in a short six-week period. It is at this time the team begins to meet on Mondays, Thursdays, and Saturdays (at least).

The build season generally follows the notional schedule below.

- Week one should have each team focus on getting their ideas together and deciding on how they want to play the prescribed game. They are also beginning to develop concept ideas.
- Week two should consist of prototype development and testing of concept ideas.
- Week three should see the completion of prototyping and the finalization of robot designs and concepts. The acquisition of materials is also an important part of this on-time manufacturing process.
- Week four should consist of robot assembly.
- Week five should see the end of construction of the robot to allow for testing of the robot in week six.
- Week six should be used for the testing of the robot and allowing time for modifications and driving skills development.

This build schedule varies from year to year. This used to be a hard deadline! Each team had to bag and tag their robot at the end of six weeks. However, the bag day was retired at the end of the 2018-2019 season. Since 2020, teams have been able to work on their robot up until, during, and after their first event.

## Competition Season

The competition season generally takes place in March and April. The FRC competition season takes place over eight weeks. For the district model, which we participate in, weeks one through five typically involve district qualifier events. For 2026, The RoboBees participated in week two and four events. Weeks six and seven are typically the District Championships. In 2026, the Chesapeake District Championship took place in week seven. Week eight typically comprises the FIRST Championship (aka Worlds).

## Schedule Example

The schedule for the 2026 build and competition season can be found below. Future FRC schedules will follow a similar format but may differ depending on the kick-off and competition dates.

| Phase              | Task/Milestone                            | Start  | End    |
|--------------------|-------------------------------------------|--------|--------|
| Planning           | Kickoff and Game Reveal                   | 10-Jan | 10-Jan |
|                    | Game Strategy Agreement                   | 10-Jan | 11-Jan |
|                    | Early Prototyping                         | 12-Jan | 14-Jan |
|                    | Subsystem Concept Sketching               | 15-Jan | 16-Jan |
|                    | System Requirements Review                | 17-Jan | 18-Jan |
|                    | Robot Layout Agreement (PDR)              | 18-Jan | 18-Jan |
| Development        | Prototyping & Detailed Modeling           | 18-Jan | 23-Jan |
|                    | Subsystem Modeling                        | 18-Jan | 26-Jan |
|                    | CAD/Software Review and Approval (CDR)    | 27-Jan | 30-Jan |
|                    | Manufacturing                             | 27-Jan | 3-Feb  |
| Integration        | Mechanism Assembly                        | 3-Feb  | 12-Feb |
|                    | Full Robot Integration                    | 12-Feb | 16-Feb |
|                    | Testing and Troubleshooting               | 16-Feb | 26-Feb |
| Practice/Iteration | Drive Team Selection                      | 26-Feb | 26-Feb |
|                    | Drive Team Practice                       | 27-Feb | 13-Mar |
|                    | Refinement of Mechanisms                  | 26-Feb | 8-Mar  |
|                    | Design Freeze                             | 9-Mar  | 13-Mar |
|                    | Competition and Documentation Preparation | 10-Feb | 13-Feb |
|                    | Post-Event Iteration #1                   | 16-Mar | 27-Mar |
|                    | Post-Event Iteration #2                   | 30-Mar | 8-Apr  |
|                    | Post-Event Iteration #3                   | 13-Apr | 24-Apr |
|                    | Trailer Transit to FIRST Championship     | 24-Apr | 29-Apr |
| Competition        | FCH District Pasadena MD Event            | 13-Mar | 15-Mar |
|                    | FCH District Severn MD Event              | 27-Mar | 29-Mar |
|                    | FIRST Chesapeake District Championship    | 9-Apr  | 12-Apr |
|                    | FIRST Championship                        | 29-Apr | 2-May  |

## Competition Format

We participate in the FIRST Chesapeake District. The RoboBees will attend two district events with the

goal of qualifying for the FIRST Chesapeake District Championship. From the district championship, we hope to qualify for the FIRST Championship.

## District Qualifiers

Every team that registers under the district model competes in at least two district qualifier events. Each event involves approximately 35 teams competing in approximately 70 qualifications matches, leading into alliance selection and a double-elimination bracket.

## District Championship

The Chesapeake District Championship, as of 2026, draws 54 teams from the Chesapeake region (Maryland, DC, and Virginia). From that event, 19 teams qualified for the FIRST Championship.

The RoboBees typically perform very well at the district championship level. The RoboBees hold the record for winning the [most Chesapeake District Championships at four wins](#). We won the inaugural Chesapeake District Championship back in 2016, as well as in 2022, 2024, and 2026. We were also finalists in 2025. The next best team has only two Chesapeake District Championship wins.

## FIRST Championship

The FIRST Championship is the culmination of the entire season. This event is an enormous spectacle, drawing teams from across the world. Billed as the world's largest K-12 robotics event, it brings FIRST's three programs (FRC, FTC, and FLL) under one roof. The [FIRST Championship website](#) notes that the 2025 FIRST Championship had 50,000 attendees from 66 counties, including 19,000 students across 1,055 teams and 1,000 event volunteers.

FIRST Championship has been in Houston in some form since 2017. Between 2017 and 2019, two FIRST Championship events took place, with one in Houston and the other in either St. Louis (2017) or Detroit (2018 and 2019). FIRST Championship did not take place in 2020 or 2021. When it returned in 2022, it came back as a single event located in Houston. In 2026, it was [announced](#) that the FIRST Championship will remain at the George R. Brown Convention Center (GRB) in Houston through 2034.

The RoboBees have attended FIRST Championship since 2011. We hold the dubiously prestigious record as one of the teams to have attended FIRST Championship the most without making it to the playoffs (the Einstein field). In 2023 and 2026, we were division finalists. We hope to break this record in the future!

## Off-season

Off-season events are typically one-day events that feel similar to a smaller district qualifier event. These take place in the summer and fall and are hosted outside of FIRST. The RoboBees typically treats off-season events as learning experiences for new students. Events that we have attended in recent years include Rumble in the Roads, The Battle o' Baltimore, and the Chesapeake Robotics Invitational.

## Team Structure

For many years, The RoboBees operated under a traditional (for FRC teams) subteam model. This meant that subteams were built around the skillset that they were focused on teaching. For example, mechanical, command and control (C&C), Community Outreach and Public Relations (COPR), or media.

While this structure produced functional robots and led to success for a small handful of highly driven students each season, it has also come with significant limitations, especially around communication, cross-functional learning, and broad engagement, as it led to siloing of information. Students tended to work in isolation from each other, which often meant design decisions were made without full understanding of code constraints, and programmers were handed hardware without context. Year after year, only a few students would emerge as truly successful. These were those who could self-manage, fill in the gaps, and connect the dots across the divide.

Starting in the 2024-2025 season, the mechanical subteam piloted an integrated product team (IPT) based approach, focused on the work products developed by the students. This was highly successful and, for the 2025-2026 season, led to an expansion of the program across the entire team. The team currently operates under the IPT model, which closely aligns with how government and industry operates.

Students are still aligned with their areas of interest. Those who want to program still end up writing code. Machinists still spend most of their time in the shop. However, in addition to their technical community, each student is now aligned to at least one IPT and has a clear goal for what to be developing and “owning” throughout the season.

We’ve found that this structure puts students in closer contact with each other, fosters better communication, and gives them ownership over a complete subsystem. In addition, there are substantially more leadership positions available for those who are interested. Each IPT lead role is an opportunity for a student to practice decision-making, collaboration, and technical coordination.

This organizational structure is not perfect. We still work through issues of varying levels of participation and commitment, which can negatively impact the schedule and performance of each IPT. However, we’ve found that this realignment has been a net positive for the team.

## Integrated Product Teams

### Frame and Drive IPT

The team exists to design, develop, and integrate the drivetrain and electronics placement of the robot. This includes creating the drivetrain system, determining optimal locations for electronics (e.g., motor controllers, RoboRIO, power distribution, sensors), and ensuring reliable integration with programming and other robot systems. This team’s goal is to complete a robust drivetrain and electronics layout early in the build process so that other subteams (e.g., manipulators, wiring, software) can proceed in parallel with a stable foundation.

## **Game Piece Acquisition IPT**

This team's purpose is to pick up any game piece on the field that the team deems necessary to pick up. This includes prototyping, designing, manufacturing, assembling, and programming. The intake must be lightweight while also strong and easy to use from the driver's side.

## **Game Piece Handling IPT**

The team exists to design, develop, and integrate game piece mechanisms on the robot. This includes rapid prototyping of potential solutions, modeling components in SOLIDWORKS, fabricating components, and ensuring reliable integration with programming and other robot systems. The objective is to create mechanisms that work in tandem with others that optimizes game piece movement after acquisition, while also ensuring reliability. Mechanisms can include elevators as an example.

## **Game Piece Scoring IPT**

The team exists to design, develop, and integrate game pieces mechanisms on the robot. This includes rapid prototyping of potential solutions, modeling components in SOLIDWORKS, fabricating components, and ensuring reliable integration with programming and other robot systems. The objective is to deliver a reliable game piece scoring mechanism that optimizes scoring potential, while ensuring reliability.

## **Human Interface IPT**

The team exists to design, develop, and integrate human interfaces for this competition season. These systems, which could include things such as controllers and drive station layouts, require a unique mix of programming, electrical, and mechanical skills that cannot be handled effectively within single capability-aligned groups. The IPT structure ensures collaboration across disciplines and efficient delivery of an integrated solution.

## **Sensing and Vision IPT**

This team exists to design, place, develop, and integrate all vision and sensors.

## **Technical Communities**

### **Command and Control (C&C)**

This team is responsible for developing the robot's electrical platform and programming the control systems. This includes all wiring of system components and determining power distribution throughout the robot. Various software programs are used to develop our control systems. Java is our



primary control system programming language. Other tasks that may be required by this team include, but are not limited to:

- Develop the electronics platform for all prototype robots and the final robot entry
- Implement and authorize electrical allocations for all sub-team components
- Maintain all prototype and final robot entry electrical operations
- Maintain and inventory a neat and organized electrical toolbox and components box
- Develop operational and control programming for the robot
- Test sensors, cameras, actuators, etc. to ensure functionality
- Maintain full documentation of C&C processes, work efforts, and diagrams as needed
- Assist with the VEX IQ programming efforts

## **Mechanical Design & Manufacturing**

This team is responsible for developing all of the designs for the mechanical structures of the robot. This includes the drive system platform and arm and end effectors. Some tasks required are as follows:

- Develop all preliminary sketches and ideas from sub-teams
- Develop all draft and final drawings
- Develop a final bill of materials for competition entry
- Develop a 3D model of the final robot design
- Coordinate with the electrical team on the wiring diagram
- Maintain a weight budget for the robot
- Help develop a fabrication schedule for the robot

This team is also responsible for the fabrication and assembly of all mechanical subsystems of the competition robot, as well as any prototype systems. Other tasks required may be as follows, but not limited to:

- Develop and maintain the robot frames for all robots
- Develop all playing field mock-ups for robot testing
- Develop the robot shipping crate
- Maintain and inventory a neat and organized mechanics toolbox and components box

## **Media**

This team is responsible for developing, collecting, and archiving all multimedia items for the team. This includes but is not limited to:

- Take/collect pictures/videos for the website
- Responsible for leading team award documentation efforts.
- Creation of a Robot Reveal video, dependent on robot availability
- Capture match video while at competitions
- Handles any other team videography and photography needs
- Responsible for the creation of team graphics (including t-shirts and robots)
- Responsible for team animation award submissions
- Develops and maintains the team branding guide

## Leadership Roles

We have official leadership positions on the team, which are determined by the mentors in coordination with the students. It is important, however, to mention that despite these fancy titles these positions rarely come with extra power, only more responsibilities.

For example, a student serving as an IPT lead does magically gain the ability to force decisions “because they say so,” nor can they veto a decision that they don’t like that is made by the rest of their IPT.

The team is about modeling a healthy working environment that is consistent with industry. Very rarely will a successful STEM professional or leader lead through dictation. Well respected leaders remain positive when working with their teammates, take initiative, lead by example, follow policies, help to educate their teammates, keep our workspace tidy and respectable, etc. Leaders do not talk down to nor about their teammates and do not push others aside.

It is also important to note that everyone on the team can be a leader, with or without a title. This can range from leadership on an IPT to simply setting an example of attitude. Leadership is about building up yourself and others. You don’t need a fancy title to do that!

## Organization Chart

The organization chart (org chart) for the 2026 FRC season can be found below. The names will change from season to season. Additionally, IPTs may be added, removed, or changed as needed.



## Student vs Mentor Led

At the 1998 FIRST Competition Kickoff Workshop on January 10, 1998, the founder of FIRST, Dean Kamen, provided this valuable insight into the philosophy behind the organization.

I don’t know how many ways to try and continue to say it. What this organization is about is not education per se. I heard a lot of people, even last night, and I think they mean well, and I understand what you’re saying, there needs to be a balance, but I heard people saying “Well sure that other team did great, but that’s because the engineers did all the work. The kids didn’t build the robot.” I have to tell you, FIRST is not an educational institution. It’s okay if the kids build the whole robot, it’s okay if they don’t touch it. FIRST ought to be to education what the NFL or the World Series is to little league.”

In a January 19, 2024 [blog post](#) on the FIRST website Collin Fultz, the FRC Senior Director, made the following comments regarding the role of mentors in FRC.

Every year, the same question is raised: “How much involvement in building the robot should the mentors have?”

Every year, the answer is the same: “However much is needed to inspire the youth on the team.”

Our mission is to create programs that give young people skills, confidence, and resilience to build a better world, and mentors are a key component to that in FIRST® Robotics Competition. Adult mentorship is part of what makes FIRST® so effective, and it's been core to our programs from the very beginning. This is also true for the support given to teams by non-technical mentors in areas like logistics, business planning, fundraising, and outreach.

... Remember that FIRST is about Inspiration. It's about being to STEAM what the NFL is to sports or Taylor Swift is to music. Team mentors have been a key part of that mission from the beginning, and we don't see that changing.

The reason that this is brought up is because it is a source of continuing confusion about the program. FRC is not a program focused on finding the high school students who can build the best robot without adult help. It's a program that is focused on partnering students with adults, especially those in industry, and building excitement and enthusiasm for STEM careers the same way that professional athletes build excitement and enthusiasm for sports careers.

The RoboBees operate on the model of building a partnership between students and mentors. We believe that our students are smart enough to struggle through the development of a robot on their own, if necessary. However, why would we want to watch students fail when we have the opportunity to help them succeed? We believe strongly in the concept of instructional scaffolding and raising the students up to reach their potential. As a result, the students don't build the robot and neither do the mentors. The team builds the robot.

This is not a universal philosophy. If you are in FRC long enough, you will hear robots (perhaps even ours) described as "mentor built." This phrase is not meant charitably and is generally used to devalue the extraordinary effort that each team makes into developing a robot that can successfully compete at the highest levels of FRC. It fails to recognize and appreciate the service that mentors provide as they work in partnership with the students and fails to recognize the exemplary work that high school students are capable of. It is not appropriate or professional to judge other teams on how they choose to run their team.

Similarly, you may also hear robots described as "toaster bots" or "BLTS" (brave little toasters). This is likewise not appropriate or professional. FRC is a competition and each team puts in an extraordinary level of effort to ensure that their robot represents the best work that they can do. Some robots are, admittedly, less competitive than others. However, it is wildly inappropriate to devalue the work of others. We do not do that on The RoboBees.

## Finances

### Overall Budget

According to the 2025 FIRST Chesapeake Impact Report, there are a total of 112 FRC teams in the Maryland, Virginia, and DC region. Of those teams, the overwhelming majority of them are school-based (83) vs community-based (29). The FIRST Tech Challenge (FTC), a smaller program with a much lower financial footprint, has double the number of teams at 266. While the majority of those are also school-based (148), a much larger number than FRC are community-based (118).

The likely reason behind this disparity is this simple fact. FRC is not a cheap program. Just the registration alone, assuming a team attends each competition, can run upwards of \$16K. Unlike those

school-based programs, community-based programs do not have the benefit of space provided by a larger educational institution. For FRC, the physical footprint required to run a high-performing team is substantially higher than FTC.

We are incredibly lucky that we are able to continue to offer FRC. We are the only team based out of St. Mary's County and one of only two currently operating FRC teams in Southern Maryland. We believe that our dedicated and talented students and mentors provide an experience that is unmatched in the region. Unfortunately, this means that the budget of The RoboBees pushes \$66K. The 2025-2026 FRC budget can be found below.

| Line Item                          | Cost        |
|------------------------------------|-------------|
| CHS District Registration          | \$6,300.00  |
| District Championship Registration | \$4,000.00  |
| FIRST Championship Registration    | \$5,750.00  |
| Rent Share                         | \$36,000.00 |
| FRC Robot Build                    | \$6,000.00  |
| FRC Field Build                    | \$1,500.00  |
| Awards / Media                     | \$1,000.00  |
| Food and Decoration                | \$350.00    |
| Office Supplies                    | \$550.00    |
| Shop Supplies                      | \$ 1,000.00 |
| T-Shirts                           | \$ 2,000.00 |
| Special Purchases                  | \$ 1,000.00 |
| Total                              | \$65,450.00 |

We cover about a third of that cost with yearly dues to be on the FRC team. Currently, that cost covers approximately 35% of the FRC budget. The rest of made up of individual, corporate, and government sponsorship (e.g., DoDSTEM covers a portion of the District registration and all of the FIRST Championship registration cost).

Additional information about the finances of The RoboBees, or growingSTEMS as a whole, can be found on the website or on Slack. Any questions can be directed to the growingSTEMS Treasurer, Dr. Andrew Koch ([ankoch@growingstems.org](mailto:ankoch@growingstems.org)).

## Student Dues

Dues for the year are \$800 per student. As mentioned in a prior section, this helps to cover the operating cost of the program. These dues can be paid on the website. An invitation coupon code will be required at checkout to complete the payment process. Invitation coupon codes are provided once a member application has been submitted and the student has been accepted to our roster.

Payments can be processed online or via check, in accordance with the growingSTEMS Payment Policy). Students have the option of paying in half or full increments. Payment is due on the following dates (or within 7 days of initial registration). If a student registers between dates, the latest amount that has not passed is due.

- September 9th: Minimum \$400 due
- November 1st: Full payment due

## Financial Assistance

We're aware of the hardship that the cost presents to many families, and we strive to make the team affordable for all those who wish to participate. The RoboBees and growingSTEMS will not turn anyone away because they cannot pay, and we have means in place to award scholarships to students based on financial need.

To the best of the organization's ability, genuine financial burden will not prevent any student who is fully participating in this team from attending competitions or events with the team. However, students must be in good standing for hours and requirements to be eligible to receive assistance.

These requests are evaluated by the board of directors of growingSTEMS. To request assistance, please contact the Executive Director, Zach Stachelczyk.

## Travel Cost

growingSTEMS will provide transportation to and from each location, but students will be responsible for hotel fees, meals, and incidentals. It is normally less than what you would have to pay out-of-pocket to go on your own. If a student is unable to pay for an event, please contact the Lead Mentor.

General estimates are provided at the beginning of each season. The cost may increase or decrease slightly as we have a better understanding of how many people are attending. Travel costs tend to solidify once the season competitions have been announced. Please note that some team members will arrive at the competition early, but no additional cost is associated with that.

Estimated travel costs are:

- Local Competition (2x) - \$185/each
- District Championship - \$300
- FIRST Championship - \$1200 (including flights to Houston TX)

## Fundraising and Sponsorship

The RoboBees solicit sponsorships and funds throughout the St. Mary's County business community. In addition to our current sponsorships, we pursue new sponsors via local engineering and technical businesses.

Team sponsors are the most crucial part to having a functional team and are the reason ours still exist. Without funding from local companies, corporations, and community members, the team could not afford the yearly expenditures accumulated, such as robot development, software licenses, and robot construction and maintenance. In addition, our sponsors are responsible for supporting our building. We also have support from sponsors in non-pecuniary ways, like tools, computer, and software donations.

Our sponsors are the reason our program still exists, and the reason growingSTEMS has been able to expand the number of programs it hosts and the reason that The RoboBees are still able to continue being a world class team.

It is expected that all students, mentors, and parents do their best to ensure the short and long term

sustainability of the team.

## **Payment Process**

Dues and travel fees can be paid by check (made out to growingSTEMS), through Zelle, or via PayPal on our website. Cash is discouraged, as it tends to not have good traceability. With limited volunteers in place to ensure proper handling of

## **Behavior Expectations**

### **Academic**

Students are expected to maintain a minimum of a C in every class. This is a standard requirement of any varsity team and, because we view ourselves as a varsity team, we hold our students to this expectation. We also expect our student leaders to "set the standard" and, as a result, we ask them to hold a higher GPA of 3.0. Students who are in danger of falling below a C in a class or who are below a C will be expected to seek assistance or tutoring sessions during team meetings. As a community-based organization, we have no direct insight into a student's performance in school. However, we rely on the honesty of the students and the supervision of the parents to ensure compliance with this policy..

### **Behavior**

The RoboBees strive to be a professional organization and we need people that will represent us well. We are a well-known team and seek to set a good example for others at all times. Rules are set forth for the safety and well-being of our team members

All students are expected to remain engaged and put forth their best effort during all team activities. The RoboBees operate on a busy schedule and require a lot of quality time from its students. This quality time is defined as time spent working toward the team's goals. While we are at a team event, we expect students to be working on team-related activities. If required, due to schedule or workload issues, students may be asked to help with a task that is outside of their normal responsibilities. Students are expected to complete these tasks to the best of their abilities and support the team in any way they can.

Students are expected to remain engaged with the team outside the normal team activities, albeit in a limited manner. Students are expected to receive and check Slack and email for team-related messages once a day. The number one way our team communicates is via Slack for day-to-day correspondence. Important announcements will also be sent via email. While updates are often also sent out via email, a Slack message is often the fastest and first way to find out about team business. Sometimes updates are time-critical, such as meeting cancellations, and the ability to receive and check team messages at least once a day is critical.

Like any other organization, it is important to have the information that we need on hand and on time. As a result, we ask that the paperwork be filled out and returned to our Lead Mentor by the required due date.

## Mentor/Volunteer Expectations

At all times, the mentors are responsible for ensuring that all decisions (including but not limited to: robot design, student participation levels, work group makeup) are made in the best interest of the majority of students and the team as a whole.

Students, mentors, and parents understand that this is a learning environment. Because the team is also a competitive team, not every idea, design, or thought by a student/mentor/parent may be realized. The team will listen and respect all ideas presented, but not all will be put into practice.

Based on time, funding, and labor constraints, as well as the dynamics of the challenge, some decisions may have to be made by the mentors to ensure the team can build a robot in six to eight weeks that can successfully play the game to the level that the team expects. It is the expectation that the mentors help the team make these hard and often unpopular decisions.

Mentors and volunteers are expected to guide students through the season by providing skills and knowledge based on their education and experience. The mentor relationship with students is informal and more casual than that of a teacher or parent. However, while most are not teachers, mentors are also not a student's "best friend." The mentor-student relationship should generally be focused around the growingSTEMS activities. Mentors and volunteers are role models for the students and are expected to act as such.

Over the course of time, mentors and students often become friends through the development of mutual trust and respect for one another. A strong working relationship between the mentors and the students is expected and even encouraged. However, those individuals must be careful to understand the limitations of those relationships, avoid the appearance of impropriety, and put the needs of the students and the team above any friendship between the two groups. All mentors are responsible for the safety and well-being of the students and are expected to act in the best interests of both them and the team.

The RoboBees welcome mentors of all ages and backgrounds. However, there is one key area of concern. The team strongly encourages that freshman college students do not return as mentors. That is, graduating seniors should take a year off before coming back as a mentor on the team.

Exceptions are made on a case-by-case basis after being discussed by the current mentors on the team. This policy is in place to encourage those graduating seniors to look beyond FIRST, experience college, and explore other opportunities available to them. It also helps to create a sense of ownership for existing students on the team as they become upperclassmen instead of having them become dependent on graduated team members' experience.

For those college freshmen who have a burning desire to stay involved with the organization, and who feel like they can manage their college experience along with robotics, we encourage you to join our combat robotics program with Team Honey Cracked.

## Parent Expectations

In general, parents are responsible for ensuring that students arrive and depart the meeting on time. The team will ask for volunteers to complete crucial tasks that help keep the organization running smoothly. These tasks may include:

- Supplying potluck lunches
- Facilitating transportation to and from events
- Serve as a mentor for the team.
- Assist in submitting grants and sponsorship requests on behalf of the organization.

The last responsibility of all our parents is to help their students balance robotics activities with schoolwork. As a community-based organization, we have no direct insight into a student's performance in school, but our priority is school first and robotics second.

## Events and Travel

### General Expectations

When students travel for competitions, they are to represent the team and the organization. Students attending events are required to attend the entire duration of the event. Late arrivals or early departures are prohibited unless explicitly approved in advance. This type of behavior disrupts the ability of the team to function, impacting things like scouting and pit rotations.

Only students who have paid team dues or travel fees by the stated deadlines are allowed to participate in team activities or travel with the team. The Executive Director may make exceptions on a case-by-case basis for a limited duration. If students are not able to pay dues or travel costs in full due to financial hardship, the situation should be brought to the attention of the director of programs to determine if the student is able to receive financial assistance from growingSTEMS in order to continue participating in the program. This is described in-depth in another section of the manual.

### Travel Eligibility

Students who plan to attend travel must be in good standing with the team. As stated before, The RoboBees strive to be a professional organization and we hold our students to high expectations. Good standing means (but not limited to) the following:

- Follow all team policies
- Good academic standing
- No disciplinary problems
- Positive interactions with the team and others

All students who are in good standing will be invited to attend all district events (pending event regulations). Attendance at any particular event is optional; however, competitions are a major part of the team experience. Therefore, every FRC student will be required to attend, at a minimum, a district qualifier or the district championship.

Sometimes our team is unable to invite every student to the FIRST Championship event due to the associated cost and mentor requirements. If this occurs, the following will result:

- Mentors will recommend students for travel based on their contributions and efforts during the current season.
- The number of students recommended for travel will be determined by the Lead Mentor based on team needs.



As soon as competition dates are announced, it is each student's responsibility to check for scheduling conflicts and to bring them to the attention of team leadership as soon as possible in order to resolve those conflicts as quickly as possible.

## **Travelling With the Team**

It is heavily encouraged that students travel with the team and stay with other students. Travel as a group helps to build team cohesion and provides the students with limited independence, facilitating some growth and increased maturity. We can't promise miracles, but we do our best.

If students are unable to travel with the team, this must be coordinated ahead of time with the Lead Mentor. They will need to be explicitly escorted by their own parent/guardian, who is responsible for physically signing them in and out with a team adult. It is up to the parents to attend the event and arrange lodging. The team, based on hotel room availability, may be able to help with this by booking family rooms. More information on this can be found below.

While FRC competitions are public events, students will be denied permission to participate with the team (in pits, stands, or in the field) at the competition if they do not travel with the team. Students can't just show up at a competition with no notice and expect to participate.

## **Lodging for Students**

Lodging costs make up the majority of the travel budget. Extensive effort is made to reduce the cost of lodging to ensure that travel fees are kept affordable. Students are almost always placed three to four to a room.

Students will be assigned a room based on a variety of factors considered by the mentors. Generally, the input of the students is not taken into consideration during this process. The opportunity to select hotel roommates is a very special privilege that is sometimes afforded to students by the team. The team may change student room assignments at any time for any reason (e.g., to consolidate underpopulated rooms to minimize the total cost incurred by the team).

## **Lodging for Mentors**

The team seeks mentors who can be unlimited participants in each of the competitions that the team attends. Mentors who are unable to attend an event the entire time are welcome to come when they can, however the team is unable to guarantee these mentors a spot in the team hotel unless space happens to be available.

Generally, the cost for mentor lodging is picked up by the team and subsidized by student travel fees. However, should mentors wish to share a room with any non-mentors, the team has instituted the following rules: Unless otherwise requested, mentors will share a hotel room with another mentor (2 mentors per room). Exceptions to this policy will be made based on gender, permitting a single mentor to have their own room. If they do not wish to share with another mentor, mentors may request their own room (or a room to share with family members) based on room availability. In such a case, the mentor will absorb the entire cost of the room and will pay for the room individually.

## Lodging for Parents

Lodging for parents who wish to travel with the team can usually be very easily accommodated if known ahead of time. In most cases of travel by family, they are asked to reimburse the team with the flat rate for the hotel across the length of the competition.

Parents wishing to reserve their own room outside of the group booking may do so; however, the parent will absorb the entire cost of the room at the “rack rate” and will pay for the room individually.

If spaces are available, the team may also propose that a parent share a room with a mentor of the same sex. If this occurs, the parent will only be responsible for 50% of the cost of the room.

In cases when parents choose to share a room with their child, the team has implemented the following policies:

- The parent is still responsible for the entire cost of the room.
- Since the cost of student participation in the event is flat regardless of the amount spent to actually house that student, there is no effect on the student’s trip fee. The student is still responsible for the full amount of the student fee. While the bulk of the cost of travel is associated with lodging, student fees still help to defray a wide array of the team’s expenses for participation in the event, such as mentor lodging, trailer transport fees, and team meals at the event.

## Hotel Conduct, Curfews, and Room Policies

Prior to the official night curfew, if students wish to gather socially or study, they must do so in designated hotel common spaces or in a room with a coach's express permission. If gathering in a hotel room, the door must remain wide open (never propped or closed).

Once the designated bed check hour hits, students must be inside their assigned rooms. They are strictly forbidden from leaving their rooms for any reason until the morning wake-up call, except in the case of a verified emergency.

Students are prohibited from changing room assignments, swapping keys, or allowing non-team members (including friends from other FRC teams) into their hotel rooms.

## Accountability During Travel

Students will not leave the assigned place (competition venue, hotel, restaurant, etc.) without appropriate mentor or parent supervision.

If a student desires to leave the team travel area and deviate from the published itinerary, they must provide notification in the event channel in Slack. This notification must describe the who, what, where, when, and how of the situation. An example is provided below.

Andrew, Carson, and Collin are leaving right now (1:15 PM) to drive to the nearest Best Buy. We need to buy a replacement controller before the next match. We expect to be back by 2:00 PM

When the group returns, they must send a message in that thread to announce the group's return. This is intended to ensure accountability of all students travelling with the team.

Mentors and parents travelling with the team are not required to follow this process, as the team is not responsible for the safety of adults. However, it is strongly recommended that you consider following this process to both ensure your own safety and allow the team to keep track of your location.

## Discipline During Travel

Discipline during travel is rare, but it does happen. Typically, poor behavior is quickly addressed and remediated without the need to escalate to formal discipline. Occasionally, however, mentors must take actions that limit the rights and responsibilities of the students.

Minor infractions typically result in a loss of privileges. This can include, but is not limited to, reassignment to other duties (e.g., drive team to pit support).

Moderate infractions, such as consistent insubordination or continued unwillingness to support the team, may result in students being asked to stay behind at the hotel for the day. This is entirely dependent on the ability of the team to support that discipline. If there is no mentor or parent who is able to provide supervision at the hotel, this moderate infraction may be escalated by necessity.

Major infractions, such as breaking curfew, entering the room of a member of the opposite sex, or violating drug/alcohol policies, can result in immediate suspension from the event. This typically requires the student's parents to be contacted so they can physically pick them up from the venue city at their own expense.

## Competition Venue Expectations and Behavior

FRC stands for the FIRST Robotics *Competition*, so it is expected that the team will go into the event with the goal of winning the event. However, that does not take precedence over the priority to be gracious and professional during the event. Throughout the entirety of the competition, all team members and individuals who are associated with the team (e.g., parents, siblings, alumni), will behave in an exemplary manner.

All people cheering in the team's block must adhere to the same professional codes of conduct as the students and mentors. This includes participating in the team chants, refraining from booing or criticizing other teams, and doing whatever is needed to support the team's activities.

While at the venue, students must actively watch matches, scout, analyze strategies, or look at other teams' robots to learn. Engaging in unrelated activities (e.g., playing handheld video games, leaving the venue to wander) without express mentor permission is forbidden.

## Competition Schedule

The schedule for each event can differ but generally follow an accepted format. District qualifier events take place over two official days, with a load-in-day for the advance team. The schedule below is replicated from the 2026 Pasadena qualifier.

|                                                       |         |          |
|-------------------------------------------------------|---------|----------|
| <b>Friday - March 13th, 2026</b>                      |         |          |
| Advance team leaves The Hive                          |         | 4:00 PM  |
| Pits and inspection open/load-in                      | 5:00 PM | 9:00 PM  |
| Fields open for calibration                           | 8:00 PM | 8:30 PM  |
| <b>Saturday - March 14th, 2026</b>                    |         |          |
| Students arrive at The Hive                           |         | 5:30 AM  |
| Depart The Hive                                       |         | 5:45 AM  |
| Arrive in Pasadena, MD                                |         | 7:45 AM  |
| Pits and inspections open                             |         | 8:00 AM  |
| Field open for calibration                            |         | 8:00 AM  |
| Drivers' meeting                                      |         | 8:30 AM  |
| Safety Captain meeting                                |         | 9:00 AM  |
| Practice matches                                      |         | 9:00 AM  |
| Opening ceremonies                                    |         | 10:30 AM |
| Start of qualification matches                        |         | 11:00 AM |
| Lunch                                                 | 1:00 PM | 2:00 PM  |
| Qualification matches                                 |         | 2:00 PM  |
| Pits close / return to hotel / dinner                 |         | 8:00 PM  |
| Team meeting                                          |         | 10:00 PM |
| Room check and lights out                             |         | 11:00 PM |
| <b>Sunday - March 15th, 2026</b>                      |         |          |
| Leave Hotel                                           |         | 7:30 AM  |
| Pits open                                             |         | 8:00 AM  |
| Opening ceremonies                                    |         | 9:00 AM  |
| Qualification matches                                 |         | 9:30 AM  |
| Alliance selections (8 minutes after last qual match) |         | 12:30 PM |
| Lunch                                                 | 1:00 PM | 2:00 PM  |
| Playoff matches and awards                            |         | 2:00 PM  |
| Pits close / leave for The Hive                       |         | 7:00 PM  |
| Return to The Hive                                    |         | 9:00 PM  |

The District Championship takes place over two official days, with a load-in-day allowed for an advance team and three days of matches. The schedule below is replicated from the 2026 Chesapeake District Championship.

|                                                           |         |         |
|-----------------------------------------------------------|---------|---------|
| <b>Thursday - April 9th, 2026</b>                         |         |         |
| Advance team leaves The Hive                              |         | 3:00 PM |
| Pits and inspection open/load-in                          | 5:00 PM | 9:00 PM |
| Practice fields are open                                  | 6:00 PM | 8:30 PM |
| Fields open for calibration                               | 8:00 PM | 8:30 PM |
| <b>Friday - April 10th, 2026</b>                          |         |         |
| Students arrive at The Hive                               |         | 5:00 AM |
| Depart The Hive                                           |         | 5:15 AM |
| Arrive in Petersburg, VA                                  |         | 7:45 AM |
| Doors open, team load-in, and on-field camera calibration |         | 8:00 AM |
| Drivers' meeting                                          |         | 9:30 AM |

|                                       |  |          |
|---------------------------------------|--|----------|
| Safety Captain meeting                |  | 10:00 AM |
| Practice matches                      |  | 10:00 AM |
| Lunch                                 |  | Noon     |
| Qualification matches                 |  | 1:00 PM  |
| Pits close / return to hotel / dinner |  | 7:00 PM  |
| Team meeting                          |  | 10:00 PM |
| Room check and lights out             |  | 11:00 PM |
| <b>Saturday - April 11th, 2026</b>    |  |          |
| Leave Hotel                           |  | 7:30 AM  |
| Doors open                            |  | 8:00 AM  |
| Practice field opens                  |  | 8:30 AM  |
| Opening ceremonies                    |  | 9:00 AM  |
| Qualification matches                 |  | 9:30 AM  |
| Lunch                                 |  | Noon     |
| Qualification matches                 |  | 1:00 PM  |
| Pits close / return to hotel / dinner |  | 7:00 PM  |
| Team meeting                          |  | 10:00 PM |
| Room check and lights out             |  | 11:00 PM |
| <b>Sunday - April 12th, 2026</b>      |  |          |
| Leave Hotel                           |  | 7:30 AM  |
| Doors open                            |  | 8:00 AM  |
| Practice field opens                  |  | 8:30 AM  |
| Opening ceremonies                    |  | 9:00 AM  |
| Qualification matches                 |  | 9:30 AM  |
| Alliance selections                   |  | 11:30 PM |
| Lunch                                 |  | Noon     |
| Playoff matches and awards            |  | 1:00 PM  |
| Pits close / leave for The Hive       |  | 6:00 PM  |
| Return to The Hive                    |  | 10:00 PM |

## Travel To and From Events

Parents and mentors are expected to help transport the students to the events. The only acceptable route for a student to arrive or depart a competition is via a vehicle that has been arranged by the team or in a vehicle driven by the parent of the student in question. If travelling with a parent, this must be arranged ahead of time with the Lead Mentor.

Students are not permitted, with extraordinarily rare exceptions approved by both the Lead Mentor and Executive Director, to drive themselves to events. This is true regardless of license level, age, or presence of passengers.

## Towing the Trailer

A volunteer is always needed to help transport the trailer to and from the competition. The trailer has an empty weight of 2,150 lbs. and a GVR of 7,000 lbs. When driven to outreach events and not fully loaded, the trailer can often be towed by an SUV. However, when fully loaded for competition events

a pick-up truck is almost always needed to safely move the trailer.

An appropriately licensed adult, mentor, or other volunteer are the only people who are permitted to tow the trailer. Students are not permitted to tow the trailer.

## Meetings, Attendance, and Team Commitment

### Meeting Schedule

The mandatory meeting schedule varies throughout the year. Generally, during the off-season, the meeting schedule looks like below.

|          |                                     |
|----------|-------------------------------------|
| Monday   | Mandatory meeting from 6 PM to 9 AM |
| Thursday | Mandatory meeting from 6 PM to 9 AM |

During the build and competition season, the scheduled meetings increase dramatically.

|           |                                                                    |
|-----------|--------------------------------------------------------------------|
| Sunday    | Optional meetings                                                  |
| Monday    | Mandatory meeting from 6 PM to 9 AM                                |
| Tuesday   | Optional meetings                                                  |
| Wednesday | Optional meetings                                                  |
| Thursday  | Mandatory meeting from 6 PM to 9 AM                                |
| Friday    | Optional meetings                                                  |
| Saturday  | Mandatory meeting from 9 AM to 3 PM, with The Hive open much later |

### Attendance Expectations

Attendance is an important aspect of our organization. It is difficult for students to learn or be inspired when they are not at team meetings. We are fortunate to have dedicated mentors who are willing to donate countless hours to work with our students, so we expect them to put in some hours too.

Students are expected to attend 85% of the mandatory team meetings during the season. This number is based on the number of meetings a student attends divided by the number of meetings that require a student's attendance. Excused absences are included in the 15% absence rate and will not be counted as a meeting attended. As exceptions to this requirement will only be made on a case-by-case basis, students should make every effort to attend as many meetings as they can. Students who do not attend at least 85% of meetings may not be invited to attend competitions. Students must attend a district event to be invited to the FIRST Championship.

Students are also expected to attend five team events outside of meetings (returning students only). The RoboBees are about more than what happens at meetings and about more than just robots. Throughout the year, the team hosts external events including demonstrations, STEM booths, community service events, team dinners, etc. We believe that this part of the season is just as important as, if not more important than, the actual robot build. Therefore, it is required that students attend at least five of these events each year. Normal meetings, the kick-off event, and competitions do not count toward the five-team events. Students who do not attend at least five team events may not be allowed to attend one district event.

Team members who cannot make a planned team meeting will notify their responsible team mentor/volunteer. For FRC, this can be done by sending a message in #frc\_attendance. This should be done prior to the start of the meeting. Sending a message that you will not be able to attend a meeting after that meeting concludes is not particularly helpful.

## Meeting Attendance

Students are expected to arrive on time for the meetings and to stay for the entirety of their session. Students are not permitted to leave the facility during a meeting unless approved by a mentor.

In the past, we have had students tell their parents that they were going to robotics but then leave early to engage in other unrelated behavior, such as hanging out with other friends unbeknownst to their parents. This is entirely unacceptable and will not be tolerated. Should something happen, this could easily negatively affect the team, the mentors, or the overall organization.

No team member is dismissed from a team meeting until the work is complete and the work area is completely clean. Barring certain emergencies, it is not acceptable to leave your workspace a mess.

Mentors will often stay as late as a student wishes to stay (and is appropriate). However, this is not guaranteed. Sometimes The Hive needs to close immediately after a meeting. Unless it is arranged ahead of time, students should either depart or be picked up from meetings in a timely fashion; Mentors are required to wait until all students have departed the facility before they can depart and we are not a babysitting service.

## FRC Awards

### FIRST Leadership Award

The FIRST Leadership Award (prior to 2026 the Dean's List Award) has been part of FRC since 2010. The description of the award is provided below

The FIRST Leadership Award recognizes the dedication and individual contributions of outstanding secondary school students participating on FIRST Tech Challenge or FIRST Robotics Competition teams. Students in 10th or 11th grade are eligible to be nominated by their team for the FIRST Leadership Award for excelling in areas such as leadership, entrepreneurship, and dedication to advancing the mission of FIRST within their communities.

Each team is permitted to submit two students per season. These nominees are referred to as FIRST Leadership Award Semi-finalists. Those that are selected at District events to be interviewed at the District Championship are referred to as FIRST Leadership Award District Championship Semi-finalists. Those students who are selected at District Championship are referred to as FIRST Leadership Award Finalists. At FIRST Championship, 10 students are selected from the pool of finalists to become that season's FIRST Leadership Award Winners.

Each year, the mentors on The RoboBees will confer and select up to two students to be the team's semi-finalists. In 2026, Colin Butrym was selected at the Pasadena qualifier to be the team's first District Championship Semi-finalist. We hope to see many more FIRST Award recipients in the future. If you, as a team member, believe that a certain student should be recognized, you should contact

the Lead Mentor with your input. The criteria used in this award are as follows:

- Demonstrated leadership and commitment to the FIRST Core Values
- Effectiveness at increasing awareness of FIRST in their school and community
- Demonstrates passion for a long-term commitment to FIRST
- The student's individual contributions to their team contribute to the overall success of the team
- Proven experience in areas of science, technology, engineering, and mathematics (STEM)
- The student is a role model and can motivate and lead fellow team members

Before nominating a student, the mentors will ask the students if they want to be nominated. While this is a great honor, it does come with obligations before and during the competitions. Students who are selected will be expected to work with the mentors and other volunteers to actively improve their interview skills, in preparation for the interviews associated with this award process.

FIRST Leadership Award Semi-finalists will be competing with other students from other teams. Since this is a competition, the team will select those students that we feel are most competitive and who are most likely to advance to higher levels. This does not always equate to the students who have made the biggest contributions to the team, the robot, or the organization.

More information about the FIRST Leadership award can be found on the [FIRST website](#).

## Woodie Flowers Award

The Woodie Flowers Award was established in 1996 to “recognize mentors within the FIRST® Robotics Competition who lead, inspire, and empower using excellent communication skills.” FIRST notes that:

This award recognizes an individual who has done an outstanding job of motivation through communication while also challenging the students to be clear and succinct in their communications. As such, it is very important that this be a student-led effort and a student decision. Team students should decide whom to nominate. Team students should write the essay nomination in their own words.

It is the expectation that students on the team take the lead in submitting this award. The significance of these nominations lies not in earning a Woodie Flowers Finalist Award, but in meaningfully honoring our mentors who shape, guide, and inspire our students every day. The process is an opportunity for students to reflect on the impact of mentorship and to express their appreciation in a thoughtful and lasting way.

The Lead Mentor will designate a student as an award submitter on the FIRST Dashboard. This student will lead a group of students in identifying a single, appropriate and deserving mentor, write the essay nomination for the mentor, and submit the award prior to the listed deadline. The students can look for help in drafting this essay, but the students should write the essay in their own words.

Before nominating a mentor, students must ask that mentor if they want to be nominated. Students should also engage and talk with that mentor to get their backstory and understand as much about them as possible. This understanding will allow the student nominator to construct an effective narrative for the essay that must be written for this award.

There is no need to keep the submission a secret on the team and better essays will come from an



open process. Ideally, the award submission will be drafted at least one month prior to the submission deadline and submitted ahead of time. It is also a good idea to get several mentors and students to proofread the essay before it is submitted.

More information about the Woodie Flowers Award can be found on the [FIRST website](#) or at the [Woodie Flowers Award website](#).

## FIRST Impact Award

The FIRST Impact Award (prior to 2023 the Chairman's Award) is undisputably the most prestigious award in FIRST. FIRST describes the Impact Award with the following:

The FIRST Impact Award (formerly the Chairman's Award) is the most prestigious award at FIRST, it honors the team that best represents a model for other teams to emulate and best embodies the mission of FIRST. It was created to keep the central focus of FIRST Robotics Competition on the ultimate goal of transforming the culture in ways that will inspire greater levels of respect and honor for science and technology, as well as encouraging more of today's youth to become science and technology leaders.

The benefits of this award are fitting the prestige provided to it by FIRST. An Impact Award win at the District Qualifier level automatically guarantees an invitation to District Championship. An Impact Award win at the Regional or District Championship level automatically guarantees an invitation to FIRST Championship.

Winning the Impact Award at FIRST Championship is the only way for a team to be installed in the FIRST Hall of Fame. A Hall of Fame team is automatically extended an invitation for FIRST Championship for the next ten years.

This award involves several essays, executive summaries, a presentation, and a video. At minimum, several dedicated students are needed to truly make this an award worthy of pursuit for the team. This is not an award to take lightly, and the team will only submit for it if we are putting everything we have into the process.

Students who wish to help the team with the efforts for this award must be dedicated to the process and need to start on the essays early in the year. The focus should not be on generating new teams or creating new outreach opportunities but rather on effectively telling the story of what the team is already doing. This means students need to spend a lot of time learning about the team, asking questions, and creating documentation.

Ideally, the essays for this award should be mostly complete by Kickoff for the season they are being submitted for. The bulk of the work for this award should not take place during build season but before it – with the time in the season devoted to refining the submission and working on the presentation, video, and any other collateral for the award.

Historically, The RoboBees have been strong contenders for this award. In 2011, the team won the Chesapeake Regional Chairman's Award. This award started the team's current FIRST Championship streak. We also won the Chesapeake Regional Chairman's Award in 2012, the Palmetto Regional Chairman's Award in 2013, and the Palmetto Regional Chairman's Award in 2015.

The team last submitted for the Impact Award (at the time, the Chairman's award) back in 2020. Since then, the team has not had a group of students who have been interested in work necessarily to

submit for this award. Our willingness to submit for this award is reviewed each year.

More information about the FIRST Impact Award can be found on the [FIRST website](#) or the [FIRST Hall of Fame website](#).

## Safety Animation Award

The RoboBees were a finalist for the [2022 Safety Animation Award](#) and won the [2023 Safety Animation Award](#).

UL Solutions provides restricted grants to the Winner and Finalists. The Winner receives \$500 and each of the two Finalists receives \$250 towards registration for the next season. The submission is also shown at all FIRST competitions.

More information about the Safety Animation Award can be found on the [FIRST website](#).

## Digital Animation Award

This award, sponsored by WPI, celebrates STEAM (Science, Technology, Engineering, Art, and Mathematics) and emphasizes the ability to tell a story through animation that integrates technological, social, and humanistic concepts.

The Digital Animation Award is offered to help encourage students to cultivate skills in design and creation of animation while telling a story about the impact of technology on society.

WPI will provide a team sponsorship covering the next season's registration fee (a \$6,300 value) to the winner of this award. FIRST will also send an official FIRST trophy & plaque to the winner.

The RoboBees won the [2023 Digital Animation Award](#). If you read carefully, you will notice that this is the same year that the team won the Safety Animation Award. These accomplishments were entirely due to the efforts of Brian Biglin, a 2023 graduate of the team.

More information about the Digital Animation Award can be found on the [FIRST website](#).

## Uniforms

All team members will wear a uniform designed by our team members that is unique to our team and helps us be recognized at events.

FRC team members will adhere to the dress code when at growingSTEMS activities and representing The RoboBees. Individuals who are associated with other programs (i.e., Team Honey Cracked) may choose to wear that uniform if that program is also represented at that growingSTEMS activity.

Team members will treat their uniforms with respect. Uniform shirts and pants are expected to be clean and free of stains. Barring approved exceptions by the lead mentor, members may not write on, cut, mark, or otherwise modify their team uniform shirts. Minor alterations strictly for reasonable tailoring is acceptable. For example, the shirt sleeves may be hemmed to a shorter length and the

size tag can be removed. However, the neckline cannot be made wider, slits/holes may not be cut into the shirt, the shirt design and sponsors may not be altered in any way, and the shirt may not be cut shorter.

Wearing team apparel comes with certain responsibilities. If you are wearing a team shirt or any piece of team apparel, you are representing us regardless of where you go. Do not behave inappropriately while wearing team apparel.

Team members will be issued two new t-shirt every year. The cost of the two t-shirts are factored into the yearly student dues. Additional t-shirts, either for the student, mentor, or family members, can be purchased for a nominal fee.

Should the team qualify for FIRST Championship, each member of the team will be issued a "Worlds" t-shirt. This shirt is, again, funded through the yearly student dues. Additional t-shirts, either for the student, mentor, or family members, can be purchased for a nominal fee.

The design of both shirts are created by the students. Often, the shirt designs are inspired by the game theme or the robot's name. Student leadership will provide the Lead Mentor with the selected designs for inclusion into the shirts.

The uniform of the day will vary based on the time of the year and the type of team activity at hand. The rest of this section will describe the appropriate uniforms for each situation. These are general guidelines and can change based on the needs of the team. Ultimately, the mentors have the final say in what is considered appropriate. If a mentor tells you to adjust your uniform, you are expected to do so without hesitation.

## **General Meetings**

During general scheduled team meetings, no specific team uniform is required unless specified by a mentor. Shirts, similar to t-shirts or polos, should cover your entire upper body (including mid-section), have a medium to high neckline, and cover your shoulders. Pants, similar to jeans or khakis, should start at your waistline and cover your calves. Shoes, similar to tennis shoes or boots, should be closed-toe shoes.

Students should not wear skirts, dresses, or other loose clothing. Soiled gym clothing, such as sports attire, sweatpants, track pants, or yoga pants, should not be worn to team meetings.

If, on occasion, you find yourself not properly dressed for team meeting (e.g. you just came from an event where you were wearing a dress, you wore gym clothes to school and forgot to change, you wore open toed shoes to work and you came straight from work, etc.) then please ensure you stay safe during the meeting and plan better in the future.

## **Outreach and Other Public Events**

A team t-shirt or polo along with pants or shorts is typically the expectation for outreach events. The emphasis should be on professionalism but with flexibility for comfort.

In warm weather, students may wear shorts. In cold weather, students may wear long pants, coats, jackets, and gloves. However, regardless of weather there are to be no sweatpants, track pants, gym shorts, or spandex/yoga pants.

Members should wear the official team uniform as directed. For example, at professional-oriented outreach events, those attending may be asked to wear a team shirt or polo along with khaki pants regardless of weather.

## Travel

For legs of travel related to official team activities but with a destination that does not end at an official team activity (e.g., from home to hotel, from competition to home), casual attire is acceptable. Casual attire includes non-team t-shirts, sweatpants, shorts (at least mid-thigh length), and yoga pants/leggings. In general, anything that is appropriate for a normal meeting is permitted.

## Competitions

Team members must wear the appropriate official uniform as directed. The official uniform will vary based on the day and the event. The breakdown below provides a general overview of what is expected at each competition. The final uniform for the event will be provided with the official itinerary.

1-days events (i.e., Off-season events)

- Day 1 (Saturday): Current year robot t-shirt, blue jeans or khaki pants

2-day events (i.e., District Qualifiers, Off-season events)

- Day 1 (Saturday): Current year robot t-shirt, blue jeans or khaki pants
- Day 2 (Sunday): Current year robot t-shirt, blue jeans or khaki pants

3-day events (i.e., District Championship)

- Day 1 (Friday): Prior year robot or worlds t-shirt, blue jeans or khaki pants, optional Honey Cracked jersey or flight suit.
- Day 2 (Saturday): Current year robot t-shirt, blue jeans or khaki pants
- Day 3 (Sunday): Current year robot t-shirt, blue jeans or khaki pants

4-day events (i.e., FIRST Championship)

- Day 1 (Wednesday): Prior year robot or worlds t-shirt, blue jeans or khaki pants, optional Honey Cracked jersey or flight suit.
- Day 2 (Thursday): Current year robot t-shirt, blue jeans or khaki pants
- Day 3 (Friday): Current year robot t-shirt, blue jeans or khaki pants
- Day 4 (Saturday): Current year worlds t-shirt, blue jeans or khaki pants

Team members may wear non-team branded coats, jackets, hats, and gloves as the weather dictates while outside the arena.

For outerwear at the competition and inside the arena, team apparel (jacket, hoodie, windbreaker, hat, etc.) should be worn. If you desire to add layers of clothing that are not team branded under your uniform for warmth, you may do so, but a team uniform shirt or jacket should be the outermost item.

Team members should always be wearing the uniform of the day at competitions; so, for example,

when we take pictures, we will remove our outerwear, so everyone has a uniform appearance. A team member that is not in uniform at an event may be asked to refrain from receiving an award or participating in a team photo at the event.

## Team Branding

Detailed information about team branding can be found in the team's [branding guide](#).

## Robot Safety

Our robots are powerful machines. They might seem like toys or elaborate remote control cars, but just one of our motors can produce in excess of 300 Watts of power and we often use eight or more of them on a single robot. They can move quicker than you can and apply forces strong enough to break steel and aluminum. It is important that you understand how to identify if an FRC robot is enabled.

All FRC Robots MUST have a safety light. The light is orange and should be mounted in a highly visible location on the robot. As of 2015, the light will be solidly lit when the robot is powered on and disabled. The light will blink when the robot is enabled.

When a student or mentor activates a robot for testing, the individual activating the robot is required to loudly and clearly announce the name of the robot and the fact that the robot is being activated. This is a hard requirement and must be done whether there are two people in the fieldhouse or twenty. It is incumbent on the person activating the robot to ensure that this command is not only communicated but also received by all people in the immediate vicinity of the robot. It is not acceptable to verbalize that you are activating a robot only to promptly run over another student, mentor, or other bystander.

In certain situations, additional measures must be taken to reduce the risk of injury and damage as a result of robot actions. This can vary from game to game. For example, our 2026 robot Phalanx, for a brief time during early development, had a rule requiring a designated spotter. Phalanx was never operated unless there was a designated safety spotter whose sole job is to look at where the fuel is going. This rule came out of multiple near misses and was in place until there was confidence in the accuracy of the game piece scoring mechanism.

## Confidentiality

We want to keep some aspects of our robot design and strategy confidential during the competition season, so we limit posting of photo/video material until the appropriate phase of the season. Confidential material is limited to sharing only with active team members and mentors.

Please extend this same courtesy to other teams. Often, we may have other teams visit The Hive during the build and competition seasons. Any media which shows their robot or mechanisms in the background must be considered confidential until after championships. This does not apply to photos and videos taken at events which are open to the public.

When sharing confidential material electronically, please utilize appropriate safeguards. For example,

Google Drive documents containing sensitive information should never be available to anyone with the link. Each student and mentor has a Google account for a good reason. Either limit it to those within the growingSTEMS workspace or be sure to explicitly whitelist each person who can access the files or folders.

When sending/posting material or links, especially when sharing outside Slack, it is not a bad idea to include a confidentiality reminder. For example, the confidentiality reminder should be included in every email which contains confidential images. Examples of appropriate markings can be found in the security classification guide.

Additional information about what material needs to be safeguarded can be found in the [security classification guide](#). If you are unsure about any of these policies, please talk to Andrew Koch.

## Discipline

The RoboBees is a high performing team committed to excellence. It is expected that all students genuinely want to be there, participate fully, and experience the full breadth that the program has to offer.

The mentors believe that since the students are in high school, it's important for them to learn how to handle things on their own. This is part of the growing process. However, if there is a situation where the mentors feel the student's safety or well-being is a concern, or the student is being kicked off the team, then parents will be notified of what is going on.

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