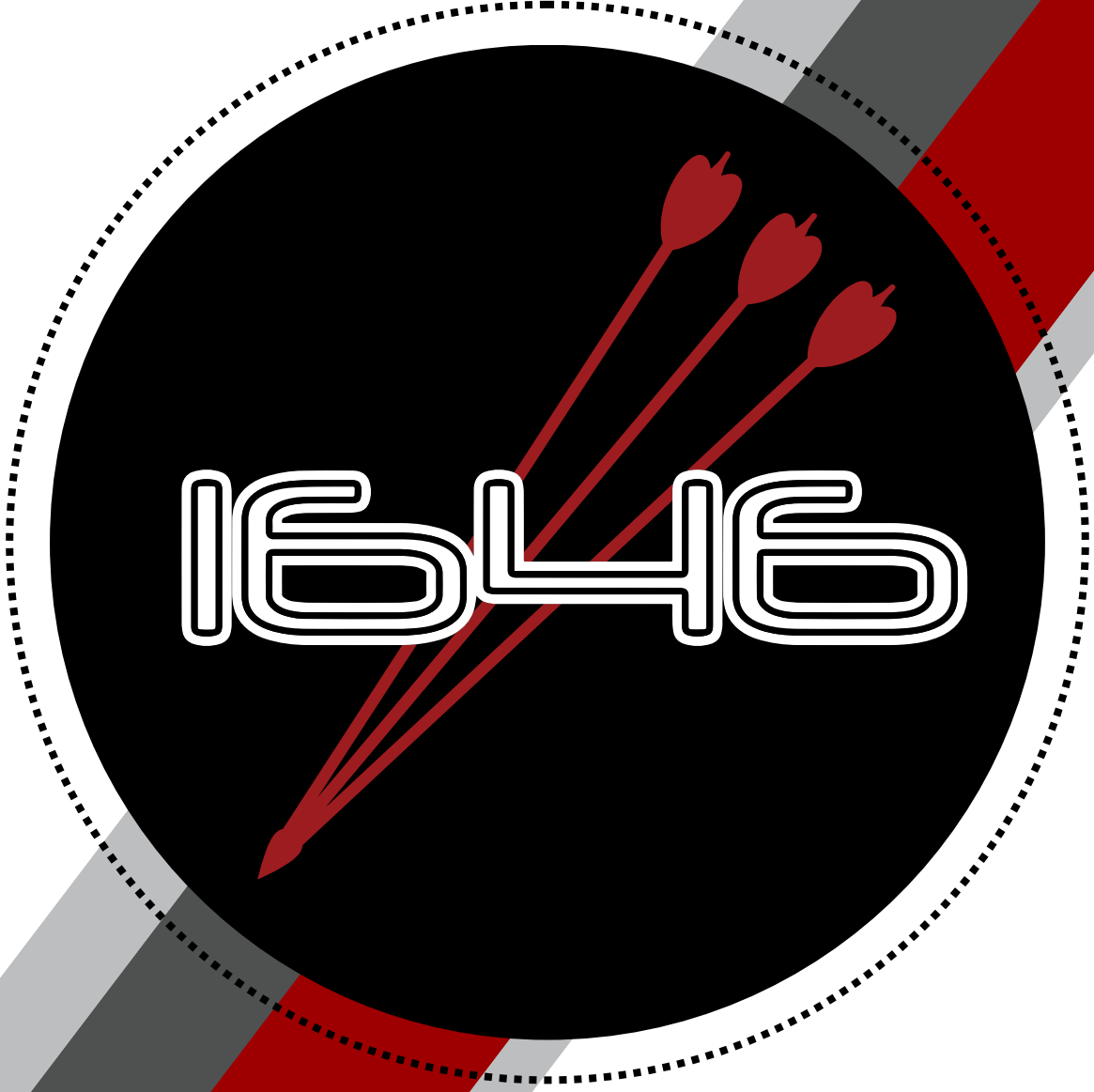
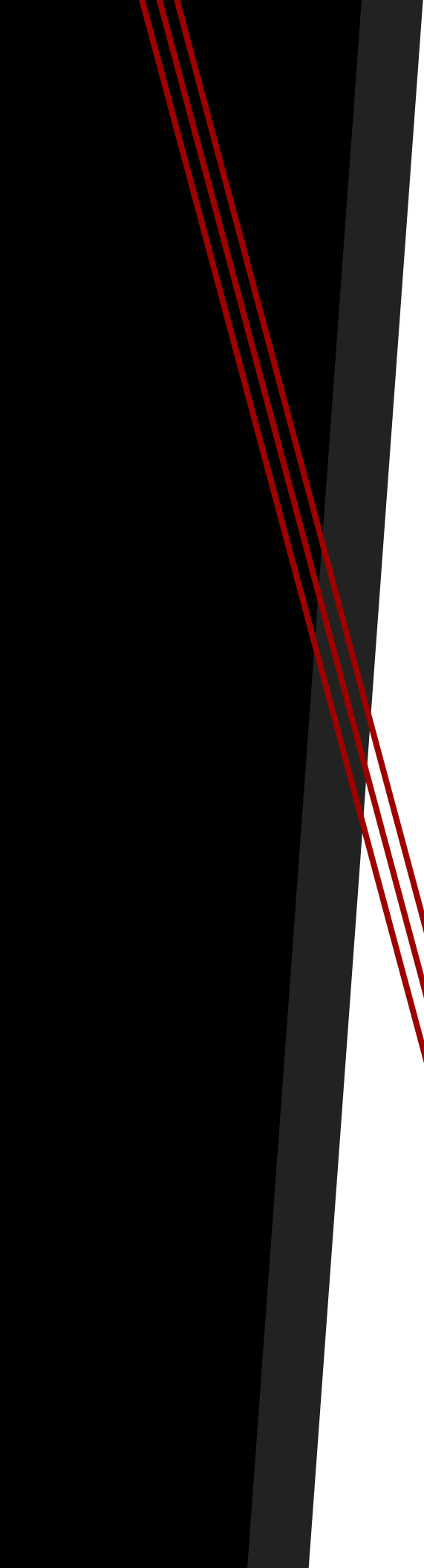


# BUSINESS PLAN



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# **TEAM BASICS**

# QUICK FACTS

## TEAM NAME

Official name: FIRST Team 1646: Precision Guessworks

Also known as: 1646, Team 1646, Precision Guessworks, FIRST Team 1646, and Jefferson High School Robotics, Broncho Robotics.

## OUR SCHOOL

School Corporation: Lafayette School Corporation

School: Lafayette Jefferson High School

Location: Lafayette, Indiana

## FOUNDING

Founding Year: 2005

Team Founders: Steve Florence, Roger Francis

Strategic Partner: Caterpillar

## MISSION STATEMENT

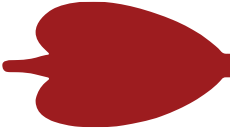
FIRST Team 1646 strives to promote inspiration of science, engineering, and technology to ourselves and our community while motivating our dedicated youth to achieve academic excellence and become future leaders.

# VISION

## THREE TENETS

These three tenets describe the defining objectives of our team. They are goals we strive for when engaging with others through outreach.

### EMBRACE TECHNOLOGY



Our team provides memorable experiences with STEM for our team and the people we impact through outreach. The team believes our students can change the future of technology.

### EDUCATE OUR COMMUNITY



We give many demonstrations of our robots and our design process at a variety of local events. Demonstrations inspire young children to engage in the same ideals as our team and FIRST.

### EMPOWER THE WORLD



The team embodies the use of STEM to further our students' success and encourage them to solve global issues. No one person can change the world; FIRST helps students understand how to work as a team so they can change the world.

# ORGANIZATION & ROLES

## COACHES

- Teachers at Jefferson High School
- Communicate with the school
- Handle overall finances
- Maintain any necessary resources
- Lead other mentors
- Overall responsibility for the wellbeing of all team members

## MENTORS

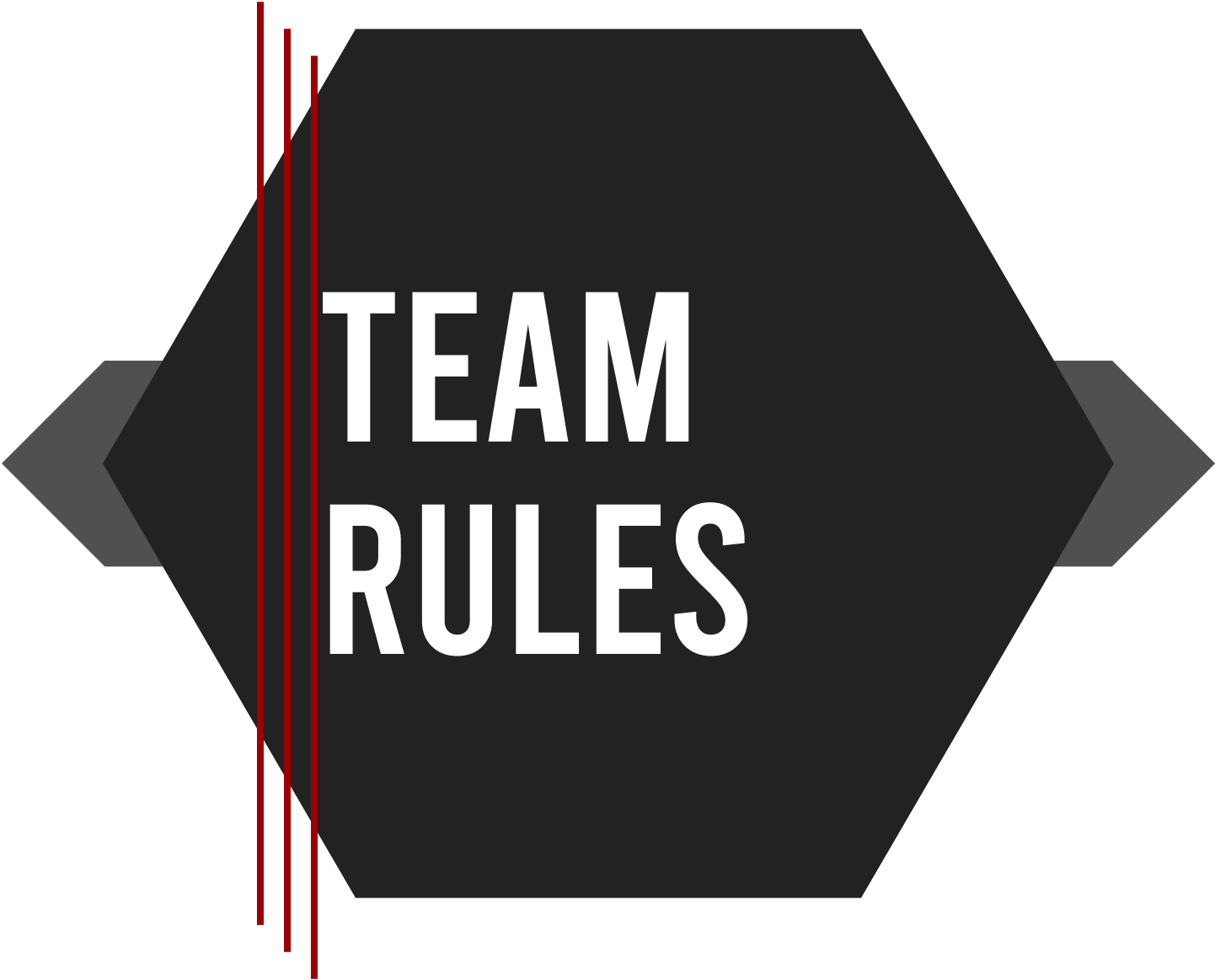
- Community professionals and Purdue students
- Supervises the team
- Guides and teaches students by working with them on projects
- Keep the team on schedule and adjust as needed

## CAPTAIN/CO-CAPTAIN

- Mentor appointed student leaders
- Handle all student-submitted awards
- Maintain clear communication of team goals/information
- Lead structured team meetings

## STUDENTS

- Maintain a team-first attitude
- Demonstrate a willingness to attempt new things
- Engage in team activities



# TEAM RULES

# STUDENT EXPECTATIONS

Team 1646 is open to all students at Jefferson High School. Team members are not required to go through any formal application to be a part of the team, however, Precision Guessworks holds our students to a high standard of professionalism. These expectations are in place to ensure the team is represented appropriately.

## ATTENDANCE

Students are expected be active participants on the team during both the build season and the off-season. Broncho Robotics students must also attend outreach and other events throughout the year. Members in good standing are attending 70% of meetings throughout the year.

## CONTRIBUTION

Students are expected to demonstrate effort at team meetings and actively seek out new, on-topic tasks. Their contributions are meaningful to the ongoing success of the team.

## ACADEMICS

School is the first priority for all students on Team 1646. Robotics is not an excuse for poor grades. Students traveling with the team should notify their teachers as early as possible.

## ATTITUDE

Students are to respect each other as well as the team's mentors, parents, sponsors, and themselves at all times. Students should conduct themselves in a professional manner at all times. This means dressing appropriately, using appropriate language, maintaining proper hygiene standards, etc. Students are expected to maintain a team-first attitude and put team interests ahead of their own objectives.

## INTERESTS

Students are expected to demonstrate a willingness to engage and learn in ways that will support the team. Students should be willing to try new things and expand their knowledge base. It is important to note that the team will not force a student to be permanently engaged in content areas they express dislike in.

# MENTOR EXPECTATIONS

Much like we have high expectations for our students, we also have certain expectations of our mentors. A mentor's job is primarily to guide and to teach. Their role is not to do the project for students, but to guide students in the projects they undertake. As students build up their skills, they can be more independent with the project at hand. The mentor's goal should always be to help students reach that point of independence. Mentors should keep an open mind and support creativity.

## PROFESSIONALISM

We appreciate mentors who can be fun but still maintain the appropriate behavior at team meetings and activities. This means our mentors must be willing to go through the numerous steps of becoming an official school volunteer and registering through FIRST as a team mentor. Following these practices best protects students on our team and makes the school aware of who is working with the students at all times.

It is of utmost importance that our mentors be accepting of students all of types, as inclusion is foundational to our team's spirit. We expect mentors that can adapt to our team culture, while bringing past experience and knowledge of their own to aid us in reaching our goals.

## ATTENDANCE

Our team appreciates the time that our mentors and coaches take to help our students grow and learn. In order to maintain consistent leadership and guidance for our students, we expect our "full-time" mentors to attend 50% of team meetings and events throughout the year. These are the mentors the team will include on travel plans and provide lodging for at competition (if required).

To simply be considered a mentor, we expect these individuals to be attending at least once-weekly meeting unless notice has been given that they will be absent for an extended period of time.

# DRESS CODE

## COMPETITIONS

In order to maintain a professional appearance, the team has a dress code for competitions. The chart below details what students should wear on a given day of competition.

|        | Load-in                                | Qualification Matches                  | Final Day of Comp                      |
|--------|----------------------------------------|----------------------------------------|----------------------------------------|
| Shirts | Red Broncho Robotics                   | Gray PG                                | Black Season 1646                      |
| Pants  | Jeans/Pants<br>or khaki colored shorts | Jeans/Pants<br>or khaki colored shorts | Jeans/Pants<br>or khaki colored shorts |

Any pants worn to competition should not be ripped or stained. Skirts, dresses, tights, and leggings should not be worn at competition.

It is mandatory that students wear closed toed shoes at competition. Students who do not wear closed toed shoes will not be allowed in the pit area or around the competition field. Likewise, jewelry or other articles of clothing must follow safety precautions (i.e. no long necklaces or hoodie strings)

## OUTREACH AND OTHER TEAM EVENTS

Safety and professionalism are just as important at other events. As such, we maintain a similar dress code for outreach and team appearances. Students should wear khaki pants or jeans and the current year's T-shirt. Certain events will have specific attire to best fit the context of the event.

A graphic design featuring a dark gray hexagon centered on a white background. The hexagon has a subtle 3D effect, with a lighter gray shadow visible on its left and right sides. Three thin, vertical red lines are positioned to the left of the hexagon, extending from the top to the bottom of the frame. The text "LEAVING AN IMPACT" is written in a bold, white, sans-serif font, centered within the hexagon.

**LEAVING  
AN  
IMPACT**

# BENEFITS FOR MEMBERS

## FOR OUR STUDENTS

Broncho Robotics is a place that allows students to get first-hand experience with STEM and business. Students learn about Coopertition, Gracious Professionalism, and FIRST's Core Values. People involved in FIRST gain important skills, such as how to communicate with employers or public audiences, and how to give presentations or speeches.

Our team is preparing students for life after high school. On average, 86.6% of Indiana students graduate high school; It is our mission to help each student on our team graduate high school. Every student on our team should graduate feeling confident in their furthering education or their career.

## FOR OUR MENTORS

Mentors on our team come from local sources such as Purdue University, FIRST alumni, local robot-people, and teachers at our school.

By mentoring the team, they earn a good resume builder, leadership experience, management skills, and organizational skills. Additionally, they continue to gain experience in the engineering design process and manufacturing techniques and they learn from each other.

With the majority of our mentors being Purdue University students, there is often high turnaround on the mentor base as they graduate and leave the community. This widespread network is a benefit to them as former mentors are employed in a variety of fields pursuing many varied interests.

# RECRUITING NEW MEMBERS

## OUR CALLOUTS

Our recruiting process starts by hosting team callouts at the beginning and end of each school year. We advertise these callouts by posting fliers around our school, but we cannot expect fliers to attract the necessary number of students.

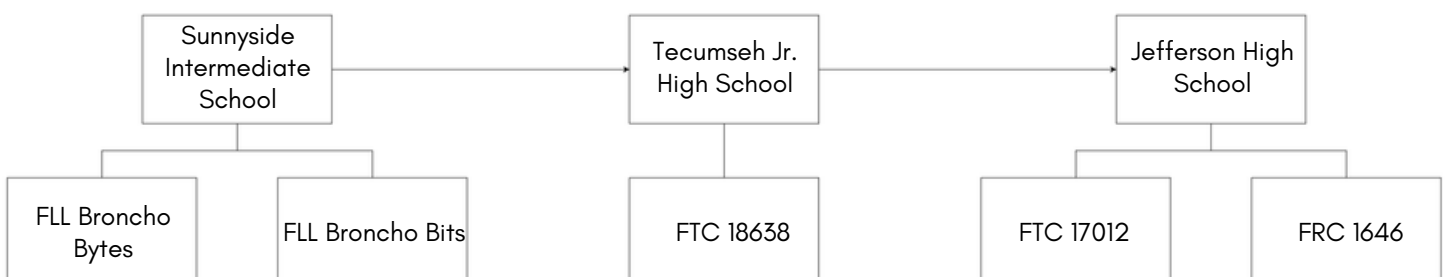
When possible, we demonstrate our robots around school trying to attract students' attentions.

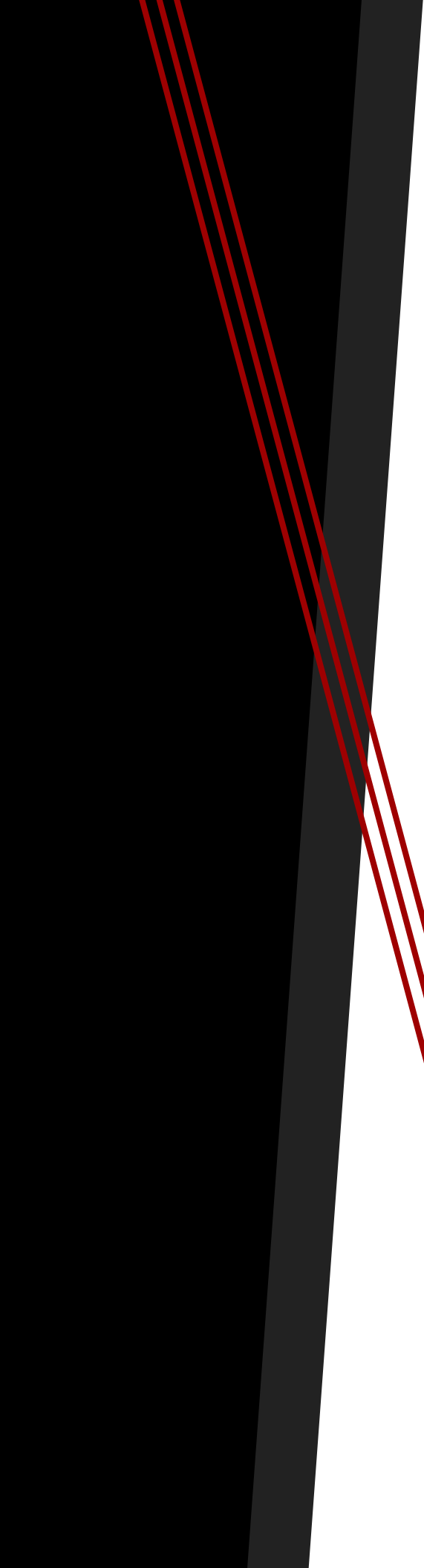
At outreach events that can attract more people to join the team, while also answering any questions they may have about the program.



## BUILDING A PIPELINE

Broncho Robotics currently starts at the Intermediate School level (grades 5-6), with two FLL teams. Ideally, these students will advance to Tecumseh Junior High (grades 7-8), where they can join our FTC team. This gives these students potentially up to 4 years of FIRST experience before making it to Jefferson High School where they can join the FRC team.





# FUNDING

# SPONSORS

## WHY WE NEED SPONSORS

Sponsorships are invaluable to the success of our team. In the ideal year, where 1646 plans to participate in the District Championship, our team expects to spend at least \$20,000 in the season. This figure includes all competition registrations up to that level, travel arrangements, and an estimate on robot cost. If we were to qualify for the World Championship Event, we could expect to spend an additional \$10,000–15,000 for costs affiliated with that event alone.

Jefferson High School, a Title I school, reports approximately 61% of all students as economically disadvantaged and has enough students meeting the requisite financial thresholds that the entire student body receives free breakfast and lunch.

Our team is representative of that figure. This coupled with our team's small size, means we cannot rely solely on student dues to raise funds for the team. Most students struggle to meet our modest fee requirements which we allow them to offset by contacting sponsors on behalf of the team and by completing traditional fundraising activities.

We are reliant on the financial support of sponsors to keep us running year after year. We simply could not exist without their support.

Sponsors are essential for more than just funds. We need them for food, equipment, manufacturing parts, and services. Some in-kind sponsors donate food so we can feed the team during our long weekend meetings or during competitions.

# SPONSOR RECOGNITION

To thank our sponsors, 1646 has arranged benefits for them to match their level of contribution to the team. Representatives of key sponsors may also be invited to events as VIPs.

## SPONSOR LEVELS

|                                                                         |                                                                              |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b><i>Strategic Partner - Longstanding Support at Diamond Level</i></b> | VIP invitations to team competitions and special events<br>Previous benefits |
| <b><i>Diamond - \$2000+</i></b>                                         | Recognition at start of match<br>Previous benefits                           |
| <b><i>Platinum - \$1000-\$1999</i></b>                                  | Logo on team t-shirt<br>Previous benefits                                    |
| <b><i>Gold - \$500-\$999</i></b>                                        | Logo on team robot<br>Name listed on team t-shirt<br>Previous benefits       |
| <b><i>Silver - \$100-499</i></b>                                        | Name listed on team robot<br>Previous benefits                               |
| <b><i>Bronze - ≤ \$99</i></b>                                           | Logo on team website<br>Thank you letter                                     |

Sponsors providing non-monetary donations to the team (such as food, supplies, or materials) will be categorized according to the value of the donation.

The Size of logo on robot and t-shirt will be scaled according to the size of the donation and dependent on available space.

# CONNECTING WITH SPONSORS

There are many ways to reach potential donors and we enact several strategies for gaining and retaining our supporters. To stay organized from year to year as members join and graduate from the team we maintain a spreadsheet of contact information for past and potential sponsors. This spreadsheet also tracks amounts we receive and any other notes that may be relevant in the future.

When we reach out to new contacts we provide information about FIRST, our team, and the impact on our community. This is the most important thing that most potential sponsors are looking for; they want to know that their money will benefit not only our current group of students but the community at large.

Once we have established a relationship with a sponsor, we work hard to keep that partnership going for many years. For example, we have presented many times for the local Breakfast Optimists club here in Lafayette, typically bringing visual aids and smaller robots to connect with them and share what we have been doing and how we have put their funds to use.



# SELF-RELIANCE

## ORNAMENT FUNDRAISER

Each year, 1646 raises money for team members' dues through a fundraiser that is well-received within our school and local community.

Right as the Christmas holiday season starts, students begin selling custom designed and manufactured ornaments. These are specific to the Lafayette Jeff community and are very popular amongst school staff and their families.

Each year, we make sure to design several new ones to reduce the odds of someone choosing to not purchase each year.

Most students are able to use this fundraiser to cover approximately half of their team dues if they are reasonably diligent in selling.





**YEAR  
AFTER  
YEAR**

# SWOT ANALYSIS

| STRENGTHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | WEAKNESSES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• School Engineering Wing <ul style="list-style-type: none"> <li>◦ Our school has a tech wing with a machine shop, wood shop, and auto lab, and they let us use the space without having to pay them money.</li> </ul> </li> <li>• Location <ul style="list-style-type: none"> <li>◦ We have many local FRC teams which are willing to support each other.</li> </ul> </li> <li>• Great Coaches/Mentors <ul style="list-style-type: none"> <li>◦ Our coaches and mentors spend a lot of time with the team and bring lots of experience.</li> </ul> </li> </ul>                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Programming <ul style="list-style-type: none"> <li>◦ We don't have many experienced programmers on the team, but we have enough knowledge to do the basics.</li> </ul> </li> <li>• Low member count <ul style="list-style-type: none"> <li>◦ Our member count has been consistently small with many recruiting efforts showing little improvement.</li> </ul> </li> <li>• Low mentor count <ul style="list-style-type: none"> <li>◦ We have few mentors and a low collective experience among them.</li> </ul> </li> </ul> |
| OPPORTUNITIES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | THREATS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• School Pipeline <ul style="list-style-type: none"> <li>◦ We have to build a pipeline of schools, in which at our middle school FLL teams Bits &amp; Bytes, are filled with 5 &amp; 6th graders who will graduate to our Jr. High for FTC. Then, at the high school they have a choice of FTC or FRC.</li> </ul> </li> <li>• School Events <ul style="list-style-type: none"> <li>◦ Our school hosts many events which allow our team to do a lot of fundraising and recruiting.</li> </ul> </li> <li>• FIRST Event hosting <ul style="list-style-type: none"> <li>◦ FIRST has repeatedly asked us to host an FRC comp each year which we accept each time, allowing us to expose our school to FIRST.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Loss of a Strategic Partner <ul style="list-style-type: none"> <li>◦ Our Strategic Partners are extremely important to our team's budget. Our registration is paid by a Strategic Partner which we rely on each year.</li> </ul> </li> <li>• Loss of mentors/coaches <ul style="list-style-type: none"> <li>◦ The loss of any coach or mentor would be a great loss because our mentors and coaches are extremely involved in our team.</li> </ul> </li> </ul>                                                             |

# AWARDS

## **FIRST ROBOTICS COMPETITION**

ROOKIE ALL STAR  
AWARD

2005  
Boilermaker  
Regional

## **FIRST ROBOTICS COMPETITION**

HIGHEST ROOKIE  
SEED

2005  
Midwest  
Regional

## **FIRST ROBOTICS COMPETITION**

JUDGES AWARD

2009  
Boilermaker  
Regional

## **FIRST ROBOTICS COMPETITION**

INDUSTRIAL DESIGN  
AWARD

2011  
Boilermaker  
Regional

## **FIRST ROBOTICS COMPETITION**

WEBSITE AWARD

2012  
Washington DC  
Regional

## **FIRST ROBOTICS COMPETITION**

JUDGES AWARD

2013  
Boilermaker  
Regional

## **FIRST ROBOTICS COMPETITION**

REGIONAL WINNER

2013  
Crossroads  
Regional

## **FIRST ROBOTICS COMPETITION**

DISTRICT EVENT  
FINALIST

2015  
FIN Indianapolis  
Event

## **FIRST ROBOTICS COMPETITION**

TEAM SPIRIT AWARD

2019  
FIN Tippecanoe  
Event

## **FIRST ROBOTICS COMPETITION**

ENGINEERING  
DESIGN AWARD

2021  
Game Design  
Challenge

## **FIRST ROBOTICS COMPETITION**

TEAM SPIRIT AWARD

2022  
FIN District  
Kokomo

## **FIRST ROBOTICS COMPETITION**

IMAGERY AWARD

2023  
FIN Princeton  
Event

# AWARDS

## **FIRST ROBOTICS COMPETITION**

DISTRICT EVENT  
FINALIST

2023  
FIN Princeton  
Event

## **FIRST ROBOTICS COMPETITION**

EXCELLENCE IN  
ENGINEERING AWARD

2023  
FIN Tippecanoe  
Event

## **FIRST ROBOTICS COMPETITION**

INDUSTRIAL DESIGN  
AWARD

2023  
FIN District  
Championship

## **FIRST ROBOTICS COMPETITION**

EXCELLENCE IN  
ENGINEERING AWARD

2024  
FIN Mishawaka  
Event

## **FIRST ROBOTICS COMPETITION**

DISTRICT EVENT  
FINALIST

2024  
FIN Mishawaka  
Event

## **FIRST ROBOTICS COMPETITION**

IMAGERY AWARD

2025  
FIN Mishawaka  
Event

## **FIRST ROBOTICS COMPETITION**

IMAGERY AWARD

2025  
ONT Niagara  
College Event

## **FIRST ROBOTICS COMPETITION**

JUDGES AWARD

2025  
FIN Lafayette  
Event

## **FIRST ROBOTICS COMPETITION**

ENGINEERING  
INSPIRATION AWARD

2026  
FIN Mishawaka  
Event