CYBER CATS
“Always on the Prowl”

5436 CYBER CATS

STONEY CREEK HIGH SCHOOL
Rochester, MI

2018-2019 Business Plan
Table of Contents

1.0 TEAM OVERVIEW

1.1 Mission Statement ................................................................. Pg. 3
1.2 Team Values ........................................................................ Pg. 3
1.3 Optimizing Student Learning .............................................. Pg. 4
1.4 Team Origin .......................................................................... Pg. 5
1.5 Team Structure (organization) ............................................... Pg. 6

2.0 RISK ANALYSIS.................................................................... Pg. 7

SWOT Analysis ........................................................................ Pg. 8

3.0 DIVERSITY & INCLUSION..................................................... Pg. 9

4.0 TEAM FINANCES

4.1 Budget and Spend Plan ....................................................... Pg. 12
4.2 Sponsors ............................................................................. Pg. 13

5.0 OUTREACH AND COLLABORATION

5.1 FIRST/STEM Outreach ........................................................ Pg. 14
5.2 Community Outreach ......................................................... Pg. 15
5.3 Collaboration Partners ....................................................... Pg. 16

6.0 FUTURE PLANS..................................................................... Pg. 17

7.0 FINAL STATEMENT............................................................. Pg. 17

Appendix A: Awards and Results

Appendix B: Team Contact Information

“Always on the Prowl”
1.0 TEAM OVERVIEW

1.1 Mission Statement

Cyber Cats Team 5436 strives to foster a fun, innovative, and creative learning environment that inspires teamwork through STEM and business principles. Our team’s success in FIRST Robotics is built upon a strong relationship among our students, mentors, school, community, and sponsors. We strive to make a positive impact not only on ourselves, but also our community and the world.

1.2 Team Values

In 2015, our team came together to establish our core values. These values are agreed upon by all team members, and we strive to keep them central in everything we do. We believe these core values help us run an effective team and allow us to make the participation experience positive for everyone. In addition to Gracious Professionalism®, the Cyber Cats established the following as our values:

- **Respect:** We accept each other and the unique talents and experiences we bring to the team. We behave in a spirit of honoring each other as members of the family. We listen to the opinions and observations of others. We give respect in order to receive respect.

- **Teamwork:** Each member has a role to play on the team. Our best solutions come from when we work together with students, mentors, sponsors, and school administration. Effective teamwork demands strong respect, relationships, and communication.

- **Innovation & Creativity:** We appreciate and encourage new ideas and innovative ways to solve problems. We embrace trying new technology when appropriate. As a team, our goal is to develop creative solutions and put them into action.

- **Fun:** We believe that being a member of the robotics team should be a fun and enjoyable experience for all members. We believe that school, robotics team responsibilities, and life should be integrated in such a way that being a member of the team is a rich and rewarding experience.

- **Cooperation, Commitment, and Communication:** We believe that all members of the team should demonstrate commitment to the team values and mission, cooperation with all team members, and a continuous effort to communicate so the team can meet the missions of FIRST and our team. We believe in all team members following and helping keep us on track with these “3C” values.
1.3 Optimizing Student Learning

We want our students to get all they can out of the FIRST robotics experience. One of the main goals of our robotics team is to help students gain valuable skills that they can apply to real life. We benefit from our small team size, which allows students to experience the many areas of robotics. We also benefit from our low student to mentor ratio; this year we have one mentor for every two students. Our goal is having the students do the majority of the work rather than the mentors; that way, FIRST learning goals are achieved.
1.4 Team Origin

Before the official formation of our team, a few students at our school had been interested in participating in a robotics program. However, because there was no program at our home high school, some students from our school participated in FIRST robotics with the team at another high school in our district, Adams High School. Eventually, there were enough Stoney Creek students on the Adam’s robotics team, providing Stoney Creek with the impetus to launch our own independent team in 2014.

During our first year, the team registered for two FIRST in Michigan District competitions. We started with thirteen student members and several mentors. After discussion on possible names, the team selected “Cyber Cats” to represent both the Stoney Creek cougar mascot and the robotics theme. In addition to building a robot, the team started working on marketing materials and uniforms, and developed a logo. Our team was off to a promising start.

In the fall of 2016, we were granted our own build room within Stoney Creek High School. When we got the room, it was vacant, so we were able to design a room appropriate for a FIRST robotics team. We decided to divide the room into two separate work areas for the Business and Robot Build teams. We devoted a lot of time in the fall of 2016 to designing and preparing the room. Many generous sponsors donated machines, tools, computers, and money to help us furnish our room. Additionally, we were able to repurpose several benches and carts, office furniture, and other supplies by salvaging them from a hospital and incorporating them into our build space. By the time the 2017 FIRST season started, our robotics room was ready to be put to use.
1.5 Team Structure

Our team is organized into six engineering sub-teams and four business sub-teams each with a student leader and mentor support. In addition, we have a safety sub-team that is in charge of ensuring team safety. In order to ensure collaboration between the sub-teams, there is one overall student lead for each of the engineering and business areas. Students get placed into sub-teams of their choice in the beginning of the season, which helps students build and work successfully in their own comfortable environments.
2.0 RISK ANALYSIS

We believe that one of the most important factors in maintaining a successful team is risk management. In order to do this, we use a SWOT analysis to lay out both our team strengths and opportunities as well as our threats and weaknesses. (See next page)

One of our main weaknesses is that we have a limited amount of space in our current build room. However, this year we may have the opportunity to expand into other parts of our building to give more working area to our build members. Expanding into other areas of the school would also possibly allow us to use more computers, which would solve the problem of not having enough technology. Additionally, this would help solve the problem of insufficient separation between the build room and business room. Because there is little separation between the two rooms, it is often very noisy in the business room which makes it hard to focus. Expanding into more areas of the school would solve this.

One of the main threats to the team is the potential loss of sponsors and funding. To avoid this, we maintain close contact with our sponsors through our weekly newsletter, “the Weekly Roar” as well as our “Meet the Cyber Cats” presentation day. We believe that if our sponsors are aware of what they help our team accomplish, they will continue funding our team. Another threat to our team is competition with other teams for resources and sponsors. Our team is located in Michigan, and Michigan has the greatest concentration of FIRST teams compared to any other state. This means that competition for resources and sponsors is high. However, by participating in community outreach events, we ensure our name is always visible which helps attract new sponsors. Community outreach also helps attract new team members, many of whom have parents with connections to potential new sponsors. Also, many parents of new students become mentors, addressing the risk of a possible loss of mentors. One more threat to our team is the loss of graduating team members. We have a few seniors that are graduating this year as well as a very large junior class that will be graduating in two years. To avoid this becoming a problem, we place an emphasis on including and teaching younger, less experienced team members the skills needed to make the team run smoothly. This means that when the older team members leave, the younger team members are ready to fill their position and start teaching the newest members. One last threat to our team is unpredictable weather, such as snow days. Unexpected snow days can lead to a loss of build time, which can be problematic with such a short build season. However, we have strong connections with staff in the school, so we are usually able to get into the school to work even on snow days.
## SWOT Analysis

<table>
<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Weaknesses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>● Increasing team membership</td>
<td>● Limited Space</td>
</tr>
<tr>
<td>● High student to mentor ratio</td>
<td>● Limited availability of computers and other technological tools</td>
</tr>
<tr>
<td>● Strong collaboration partnerships with other teams</td>
<td>● Lack of separation from build room</td>
</tr>
<tr>
<td>● Versatile build room</td>
<td></td>
</tr>
<tr>
<td>● Solid budget and strong sponsorships</td>
<td></td>
</tr>
<tr>
<td>● Strong foundation to inspire others</td>
<td></td>
</tr>
<tr>
<td>● Diversity</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Opportunities</strong></th>
<th><strong>Threats</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>● Expansion of real estate</td>
<td>● Loss of sponsors</td>
</tr>
<tr>
<td>● Increase of community outreach</td>
<td>● Loss of students</td>
</tr>
<tr>
<td>● Additional mentoring of others</td>
<td>● Statewide competitors</td>
</tr>
<tr>
<td>● Many new students</td>
<td>● Loss of mentors</td>
</tr>
</tbody>
</table>

"Always on the Prowl"
3.0 DIVERSITY AND INCLUSION

It has been proven through multiple streams of research that diversity in teams will lead to extraordinary results. Women in STEM have traditionally been a minority. The Cyber Cats have encouraged more participation from women throughout our years as a team. Our female numbers have substantially increased from two women in 2015 to twelve in 2019. The women on our team mentor the community to inspire young girls to join a FIRST team and get involved in STEM. The Cyber Cats competed for the first time in the 2017 offseason All Girls Competition through FIRST, and did exceedingly well. We encourage younger girls from the Hart E-Bots FTC team to watch this event to encourage them to continue robotics to a higher level. We are planning on continuing our participation in this event in the future. Our team also prides ourselves in continuing to grow our racial diversity. At Stoney Creek High School, the majority of the students are Caucasian, thus making it difficult to have a racially diverse team. Despite this, we continue to sustain a diverse population on the Cyber Cats by encouraging and welcoming all minorities from our school. Our inclusion philosophy is to seek diverse opinions from all members of the team in both engineering and business aspects. As a team, we hope to promote the message that there is a place here for everyone, regardless of race, age, experience level, gender.
Above: Team Demographics

“Always on the Prowl”
Below: Bloomfield Hills Girls Competition

“Always on the Prowl”
4.0 TEAM FINANCES

4.1 Budget and Spend Plan

In order to ensure that our team is spending responsibly, we created a comprehensive budget before the season began. Our budget is based on a season in which we compete in two district competitions and one state competition. Starting this season we have been budgeting for the world competition fees as we have gone for the last two years. To better control our spending, we first developed a forecast of different sub-team expenses. Based on this forecast, we gave each sub-team a budget. Each week, an update on our budget is given to sub-team student leads and mentors to help them monitor their financial status. Every year we target to budget around 20% carryover of our funds, in case we lose a sponsor or if other unexpected expenses arise. Shown below is our current budget and spend plan.
4.2 Sponsors

In order to be a successful and an independent team, we rely on help from various sponsors from whom we receive financial support, mentoring and tools for our build room. Currently, we have gained the support of most of our sponsors through parents of students on the team. We hope to continue adding sponsors as more students join the team, as well as by making sure that we are an active presence in our community. We have three different sponsorship levels: Kitten, Cub, and Cougar. For the Kitten level ($100-$499), sponsors can get their name or logo on our social media pages. With the Cub level ($500-$2499), sponsors can get their name or logo on our social media pages, a small logo on the robot, a small logo on banners in the pit, a small logo in banners used for community outreach, and their business’ name read during each competition opening. At the Cougar level ($2500+), sponsors can get their name or logo on our social media pages, a large logo on our robot, a large logo on our banners in the pit, a large logo on banners used for outreach, and their business’ name read during each competition opening.

“Always on the Prowl”
5.0 OUTREACH & COLLABORATION

As a team, we strive to inspire not only our students, but the community and future generations as well. We believe that the best way to do this is by getting involved in community events and collaborating closely with others in our community. To achieve this, we place an emphasis on many different types of community outreach, STEM related outreach, and collaboration.

5.1 FIRST/STEM Outreach

One of the highest priorities on our team is to spark an interest in FIRST and STEM related activities. Our goal is to inspire people by spreading the messages of FIRST such as Gracious Professionalism® and Coopertition® to benefit every aspect of the lives of younger generations.

Middle School Mentoring
For the past three years (since 2016), we have mentored Hart Middle School's FTC team, the E-Bots Team 8478, to help them gear up for success. In the past, we held a week-long “mini-camp” to help the E-Bots FTC Team switch from Labview to Java. This season, we focused on improving their business and presentation skills along with designing and building a successful robot. We have also graciously allowed them to use our build space for the past two years. With our assistance, they qualified for the state competition for the first time in the 2017 season, and have come in first place in competitions this year.

Hosting Jr. FLL Exhibition
To date, we have hosted two FLL Jr. exhibitions in our school. This event is the only one of its kind in our area. We host the event at our home school, and recruit various sponsors and community partners to run STEM related stations for the kids to enjoy. Our team members volunteer as judges, help out at stations, and run a concessions stand. As a team, we feel the event is a huge success because it paves the way for future STEM and business related careers and teaches children about the important values of FIRST, which they will use in every aspect of the rest of their lives. The exhibition is always a huge success, and we plan to host more in the future.
Science Fairs
The team participates in various science fair demonstrations using our robots from past years. So far, we have completed events at Hugger, North Hill, McGregor, and Musson Elementary School science fairs. We will continue participating in science fairs in the future. Our goal is to spark an interest in robotics amongst young kids and inspire them to join a FIRST program in the future.

5.2 Community Outreach

Our team takes pride in the amount of activities we do to engage with our community. Doing this helps us inspire more people to find ways to participate and support FIRST related activities. It also allows us to be known throughout our community.

Rochester Hometown Christmas Parade
We participated in the Rochester Hometown Christmas Parade in the beginning of the season along with other FRC teams in our area. An estimated 75,000 people view this televised event. By doing this, we help create awareness for the advancement of STEM and FIRST throughout our community.

Hunger Walk at Rochester Park
Every year, our team organizes a “hunger walk” in collaboration with the AdamBots and the FEDS (our Rochester school district FIRST teams). This walk raises money and gathers kitchen items for a local food pantry, the Rochester Neighborhood House.

Sponsor Presentations
We present our robot to our sponsors to help show them what their support enables us to do. So far, we have done robot demonstrations at DENSO and ND Industries, as well as GM. We plan to do more demonstrations this season as we are gaining more sponsors.
**Newsletter**
Every week, we create a newsletter called “The Weekly Roar” and send it out to students, parents, and mentors. The newsletter contains updates, important team happenings, interviews from student members of the team, pictures of the team working, and an update on the status of the robot. The newsletter helps us engage everyone it is sent to, which helps us retain sponsors, mentors, and team members. Our newsletter is also sent out along with our school’s newsletter to spread our name across the entire school and get more students interested in joining our team.

### 5.3 Collaboration Partners

In the spirit of Coopertition®, we find that it is important to collaborate with other FIRST teams because it is an excellent learning experience and it exposes students to new ideas from different people on other teams. As a result, students are more accepting towards ideas and beliefs that are different from theirs, which is beneficial to the team and individuals.

Since 2015, we have been collaborating with
- The Adambots FRC Team 245 from Rochester Hills, Michigan
- The RoboVikes FRC Team 6121 from Grayling Michigan
- The Village Bulldogs FRC Team 3096 from Detroit, Michigan
- The Lambots FRC Team 3478 from San Luis Potosí, Mexico

In more recent years, we have been collaborating with more teams, including
- The FEDs FRC Team 201 from Rochester, Michigan
- RoboPhoneix FRC Team 2224 from Detroit, Michigan
- St. Ignace SHEILD from St. Ignace, Michigan
- The Byting Bulldogs FRC Team 3539 from Romeo, Michigan

With these teams, we share ideas and resources, which both benefits our team directly and allows to share our knowledge. For example, we collaborate with the Byting Bulldogs to share a practice field. This lessens workloads while still allowing us to get in valuable practice. This also allows both teams to have other bots to practice working with or against other teams, better simulating a competition.

Recently, the three FRC teams in Rochester (201, 245, and 5436) have collaborated to create the Rochester United Outreach team. Together, we volunteer to enrich the local FLL and FTC programs. Having this alliance allows us to participate in more outreach and raise more awareness for FIRST in our community. For example, Rochester United recently put on a FTC event to allow teams to practice for the upcoming season.
6.0 FUTURE PLANS

In the five years since our formation, we have created a very strong, successful, and influential team. This has been made possible due to the support and contributions of our sponsors and mentors and our school officials, as well of the hard work of our students. We plan to continue to grow and improve our team in upcoming years. Some of our future plans include…

- Increasing our community outreach- As our team grows in size and experience, we want to continue to expand our reach and presence in our community to spread the messages of FIRST and Gracious Professionalism®. In order to do this, we will continue to seek out new opportunities for community outreach and volunteering. Some current ideas include volunteering to help an animal shelter and doing presentations on FIRST in classes at our school to get more students interested in the program.

- Maintaining our team size- Currently, our team has 40 students. We plan to maintain this size as it allows all students on the team to actively participate in all aspects of the robotics program. If demand for the team grows too large, we will consider starting a second team within our school.

- Increasing diversity- We would like to continue making our team as inclusive as possible. To do this, we will continue making inclusivity a priority, and will follow our diversity and inclusion plan.

- Continuing to add sponsors- In order to run a successful team, we the support of generous sponsors. As our team plans to expand our efforts out into the community more, we will need more sponsors to support us. As we become more present in our community and gain new students, we hope to also gain new mentors.

- Expanding our build space- As our team has grown through the past five years, we are beginning to struggle to accommodate our team in our build space. We are looking into expanding further into other areas of the school to help solve this problem.

7.0 FINAL STATEMENT

Our goal is to inspire future engineers, programmers, and business leaders to promote success for future generations. With the help of community partners, we can make this vision a reality and help impact our community. We believe that with hard work, we are capable of contributing bright ideas and a new future for the world we live in today.

“Always on the Prowl”
Appendix A: Awards and Results

2015
Rookie All Star - Howell District
Quarterfinalist - Howell District
Imagery - Troy District
Finalist - MARC Off-season event
Semi-finalist - Kettering Kick-off Off-season event

2016
Quarterfinalist - Waterford Districts
Quarterfinalist - Marysville Districts
Winner of MARC - Off Season Event

2017
Engineering Inspiration - Kettering District Week 2
Entrepreneurship - Troy District Week 5
Finalist - SVSU States
Quarter Finalist - Worlds (St Louis)

2018
Imagery - Southfield District and Troy District
Finalist for safety award- Southfield District

Appendix B: Team Contact Information

Website: www.cybercats5436.com
General Email: cybercats5436@gmail.com
School Name: Stoney Creek High School
School Address: 575 E Tienken Rd, Rochester Hills, MI 48306

“Always on the Prowl”