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“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 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 mission of FIRST and our team. We believe in all team members following and helping keep us on track with the 3C values.
Cyber Cats Team 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 the 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 their own independent team.

During our first year, 2015, 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 several logos. 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 three business sub-teams each with a student leader and mentor support. In order to ensure collaboration between the sub-teams, there is one overall student lead for each of the engineering and business areas. We also have a program management team that leads overall activities: scheduling, managing robot weight and build materials, travel management, and overall support. Students get placed into sub-teams of their choice in the beginning of the season, which helps the students build and work successfully in their own comfortable environments.

Cyber Cats FIRST Organization Chart
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. Also, 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 computers. We have had problems with not having clear schedules and deadlines for meetings and when certain things should be done, leading to some wasted time during meetings. However, next year we plan to establish deadlines and schedules very early on in the season, leading to more effective time management. Another weakness of our team is that we do not currently have an effective protocol for reporting and replacing tools and equipment if they are broken or damaged, which has lead to a lack of certain working tools. However, we are working on establishing an effective system to replace broken items so this problem can be resolved.

One of the main threats to the team is the possible 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 highest concentration of FIRST teams than any other state in the USA. 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. As senior team members graduate, some experience and leadership could be lost. 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 member.
### SWOT Analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Student to mentor ratio 2:1</td>
<td>● Limited Space</td>
</tr>
<tr>
<td>● Increasing team membership</td>
<td>● Limited availability of computers and other technological tools</td>
</tr>
<tr>
<td>● Strong collaboration partnerships with other teams</td>
<td>● Unstructured time management of team and team members</td>
</tr>
<tr>
<td>● Versatile build room</td>
<td>● Lack of equipment/tool replacement protocol</td>
</tr>
<tr>
<td>● Exposure going to World &amp; State competitions</td>
<td></td>
</tr>
<tr>
<td>● Solid budget and strong sponsorships</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</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>● Member attrition</td>
</tr>
<tr>
<td>● Opportunities for more awards</td>
<td>● Statewide competitors</td>
</tr>
<tr>
<td>● Mentoring others</td>
<td>● Loss of mentors</td>
</tr>
</tbody>
</table>
3.0 DIVERSITY AND INCLUSION

3.1 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 in women throughout our years as a team. Our female numbers have substantially increased from two women in 2015, to eleven in 2018. 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. 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, or gender.
Above: Team Demographics

Below: Bloomfield Hills Girls Competition
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. To better control our spending, we first developed a forecast of different subteam 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.

This year, we invested over 40% of our budget into a 3D printer, a new drive station, and building a part inventory. Having a part inventory is important because it enables us to prototype future robots and have spare parts should they be necessary. Every year we target to budget a 15% 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.

![Budget Chart]

![Spend Plan Chart]
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. This year, we have created three different levels of sponsorship: 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. In 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.
5.0 OUTREACH & COLLABORATION

Through our outreach, we ensure that the Cyber Cats give back to our Community both on FIRST/STEM related initiatives as well as impacting the quality of life at our community at large. Our outreach activities give us the visibility in our community, helping to attract more team members and sponsors along the way. We also strive to partner up with other FIRST Teams throughout the year in our outreach endeavor.

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® will be extremely beneficial in every aspect of the lives of the younger generations.

Middle School Mentoring
For the past two 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 also graciously allowed them to use our build space this year. With our assistance, they qualified for the state competition for the first time.

Hosting Jr. FLL Exhibition
This year, we hosted a FLL Jr. exhibition at our home school, which was the first time an event like this was hosted in our region. We got sponsors such as DENSO and the Clinton River Watershed Council, and other community partners to manage various STEM-related stations at which the children actively participated. Our team members volunteered as judges, helped out at stations, and ran a concessions stand. As a team, we feel the event was a success because it began to pave the way for future STEM and business related careers, and it started to teach children about the important values of FIRST, which they will use in every aspect of the rest of their lives. The exhibition was a huge success this year, 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 the Cyber Cats to be known throughout our city.

Rochester Hometown Christmas Parade
We participated in the Rochester Hometown Christmas Parade in the beginning of the season (which an estimated 70,000 people viewed) along with other FRC teams in our area. By doing this, we strive to create awareness for the advancement of STEM and FIRST throughout our community.

Relay for Life Fundraisers
The Cyber Cats have a relay for life team that collaborates with the AdamBots’ team to raise money for cancer research as well as to honor cancer victims and survivors.

Hunger Walk at Rochester Park
Our team organized a hunger walk, in collaboration with the AdamBots and the FEDS our Rochester school district FIRST teams, to raise money and gather kitchen items for a local food pantry, the Rochester Neighborhood House.

Halloween Hoot Clean Up at Dinosaur Hill
A local nature preserve holds an annual “Halloween Hoot” where many young children enjoy a night of fun. As a team, we work hard after the event to clean up the grounds. This gives us a positive reputation with our community.

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 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, 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 to get more students interested in joining our team.
5.3 Collaboration Partners
In the spirit of Coopertition®, we find importance in collaborating with other FIRST teams because it is an excellent learning experience and exposes students to new ideas from different people on other teams. As a result, it will help students be more accepting towards ideas and beliefs that are different from theirs which will be beneficial in the future.

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.

With these teams, we work together to provide assistance and exchange ideas regarding game strategy and robot design. Recently, we have been collaborating with The Byting Bulldogs FRC Team 3539 from Romeo, Michigan, to help build a practice field which several teams, including ours, use throughout the season.
6.0 FUTURE PLANS

In the four 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 as 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 message 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- As some team members graduate, it will be necessary to attract enough new members to keep our team the same size. Although we are open to our team growing a few members, we will likely limit our membership to around 40 students because this allows every student on the team a chance to participate. However, if demand for the team becomes too large, we will consider creating another FIRST team.
- 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 need to receive 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.

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)

Appendix B: Team Contact Information

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