

ADAMBOTS

A collage of various photos showing the team in action. It includes a large group photo of the team in yellow shirts, a person holding a flag with a nuclear symbol, a person in a duck mascot costume, and several people working on laptops and equipment in a workshop or classroom setting.

Team 245

Rochester Hills, Michigan
Adams High School

Sustainability and Business Plan

COMPREHENSIVE PLAN FOR CONTINUITY, SUSTAINABILITY, AND CONNECTION

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1.0 Executive Summary

1.1 Team Mission Statement

“To provide a sustainable learning environment that fosters growth and appreciation of STEM and business knowledge, and to teach students skills vital to success in the real world through a strong relationship between students, mentors, and sponsors.”

At the nucleus of our mission, student and mentor team members collaborate to inspire interest, knowledge and application of STEM, business, and leadership skills. *FIRST* values such as Gracious Professionalism™ and Coopertition™ serve to bond our members-- students and mentors alike-- and provide a focus for all that we do. Orbiting the nucleus are our Core Values which further energize us to sustainable team success and contribute to the goal of spreading the word of *FIRST*.

1.2 Why a Sustainability Plan?

Our Sustainability Plan has been created to document the team’s approach to achieving our mission in a sustainable manner. The AdamBots radiate our positive charge in a way that attracts, enthuses, and empowers future team members as well as other *FIRST* teams both in our area and around the world.

1.3 Team Summary

Based at Rochester Adams High School in Rochester Hills, Michigan, the AdamBots began in 1999 with a small team of ten. We have grown steadily and today have 70 students and 28 mentors. We design, build, and program our robots in the Adams build room, engineering room, dedicated robotics room, and two classrooms. The AdamBots are heavily involved in the local and global STEM communities, including supporting *FIRST* at all levels. We have eleven sponsors, including corporate, government and friends and family that together fund almost half of our team expenses. Our largest sponsor is General Motors. Each fall we raise over \$5,000 through our successful parking lot business. Community outreach is integral to our team culture, and the AdamBots provide over 1,200 hours of community service and outreach each year. Our team has been a team fundraiser for the American Cancer Society’s Relay for Life for over 15 years in our area, raising more than \$115,000 over the years. Our community service also resulted in our city mayor awarding us the Community First Award, for making “a notable effort to improve the quality of life for those around” us.

1.4 AdamBots Core Values

CORE VALUES

GRACIOUS PROFESSIONALISM

“Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.” – WOODIE FLOWERS

FUN

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

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.

RESPECT

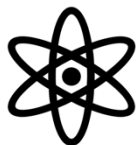
We accept each other and the unique talents and experiences we bring to the team. We behave in spirit of honoring each other as members of the family. We will listen to the opinions and observations of others. We will give respect in order to receive respect.

COMMITMENT, COOPERATION 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 that the team leadership should set the example for all team members to follow and help keep us on track with the 3C values.

INNOVATION & CREATIVITY

We appreciate new ideas and imaginative ways to solve problems. We embrace trying new technology when appropriate. We strive to develop creative solutions and put them into action.



ADAMBOTS
Team 245

2.0 Sustainability

2.1 Set SMART Sustainability Objectives

The SMART acronym is a way to evaluate objectives, and make sure they are specific, measurable, achievable, relevant, and time bound. This system is crucial in identifying our objectives, as we need to make sure that each one follows all the components of the SMART acronym. SMART objectives help with ensuring the sustainability of our team. Additionally, SMART objectives assist with providing our team with direction and focus while trying to achieve our goals.

- **Specific:** The goal needs to be clear and detailed
- **Measurable:** The goal needs to be quantifiable, and able to be tracked
- **Achievable:** The goal needs to be realistic and reasonable for the team to achieve with the resources available
- **Relevant:** The goal needs to be relevant to the mission and purpose of our team
- **Time-Bound:** The goal needs to have a deadline in which it must be accomplished

The main objectives of our team listed below all conform to the parameters of SMART goals.

2.2 Sustainability Objectives and Tactics

AdamBots Objectives and Tactics

These are the objectives and tactics we use to ensure the sustainability of our team. Below, each of our team objectives are listed, as well as the tactics we use to reach these objectives.

Objectives	Tactics
<p>Mentoring other teams The AdamBots mentor junior robotics teams to spread awareness of <i>FIRST</i> and to recruit future AdamBots. This is measured using our sign in sheets.</p>	<ul style="list-style-type: none"> ● We mentor FLE, FLC, and FTC each fall. ● Each student is required to provide one and a half hours per week in mentoring. ● Each student of our team is required to provide at least three hours of support to a robotics competition in the fall either at one we host or one hosted by Rochester United.
<p>Community Outreach The AdamBots participate in community outreach events to give back to our community, to spread awareness of <i>FIRST</i>, and to emphasize the importance of social responsibility to team members. This is measured through sign in sheets.</p>	<ul style="list-style-type: none"> ● We provide community outreach in the off season. ● Every team member is required to participate in at least five outreach events, including raising money, donating items for organizations in need, and helping with labor. ● During outreach and mentoring all team members wear their AdamBots shirts to advertise our team.

<p>Financial Sustainability The AdamBots aim to be financially stable each year and have enough funds to support all our initiatives and competitions.</p>	<ul style="list-style-type: none"> • The team has an annual budget that is monitored by the lead business mentor. • The team sends thank you notes and newsletters to sponsors. • The team provides all the required information for the MDE grant. • The team always leaves enough funds at the end of the year to fund at least the Michigan districts the following year.
<p>Organization Structure The AdamBots strive to create diverse opportunities to allow team members to pursue their interests. As a large team, we use sub-teams with student leaders and adult mentors.</p>	<ul style="list-style-type: none"> • We provide a foundation for the students to try new engineering activities and divide the students into sub-teams of their interest in both the engineering and business side. • Students are selected to be co-leads of the sub-teams with specific mentors assigned to provide support and share their technical or business knowledge. • Each student is provided communications information for their sub-teams and schedules are posted on the team calendar.
<p>Adult Mentors The team recruits and retains strong adult mentors to support a large team.</p>	<ul style="list-style-type: none"> • Veteran mentors train new mentors in the fall, so they are ready for the <i>FIRST</i> season. • All mentors register on the <i>FIRST</i> site and complete school background checks. • Mentors traveling with the team to overnight events are fingerprinted. • At the beginning of the season, parents of new students are recruited to become mentors if available and they have skills to share.
<p>School Relationship The team works closely with the Rochester Community Schools Administration and the Rochester Adams School Administration to maintain and grow our robotics build space.</p>	<ul style="list-style-type: none"> • Follow all school budget practices as measured by the lead business mentor. • Support requests from the school administration for presentations and demonstrations including the Gold Rush tailgate event. • Support local schools with science fair participation to demonstrate the robotics program. • Build and maintain the T-shirt cannon used by the football team and other activities.

3.0 Team Information

3.1 Basic Team Facts

Rookie Year	1999
Location	Rochester Adams High School, Rochester Hills, Michigan
School Affiliation	Rochester Adams High School
Team Demographics	<p>70 Students (39 returning and 31 new)</p> <ul style="list-style-type: none"> ● 12 Seniors, 10 Juniors, 23 Sophomores, 25 Freshmen ● For gender information, please contact the lead mentor
Mentors	<ul style="list-style-type: none"> ● 228 total years of mentoring <ul style="list-style-type: none"> ● 3 Teachers ● 14 Engineering mentors ● 8 Business mentors ● 3 Technical mentors ● 28 Mentors
Sponsors and Partners	<ul style="list-style-type: none"> ● General Motors ● APTIV Foundation ● R&G Drummer ● State of Michigan Robotics Grant ● Salem Steel NA, LLC ● Thyssenkrupp ● Rochester Community Schools ● Rochester Adams High School ● Doolin and Haddad Advanced Dentistry ● The Pickard Family ● Friends and Family
Website	https://www.adambots.com

3.2 Member Benefits – Students, Mentors, School, and Sponsors

Student Benefits

- Learn how to design, build, wire, and program a robot
- Develop confidence
- Improve communication skills
- Improve leadership skills
- Have fun
- Be part of a community and work as a team
- Help others through community outreach
- Gain opportunities to earn scholarships and obtain internships
- Get a head start in studying a STEM related field such as engineering etc.
- Develop project management and time-management skills
- Work with and learn from adult mentors who have professional experience in the areas of science, technology, engineering, math, and business



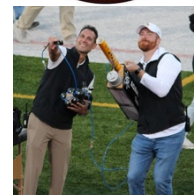
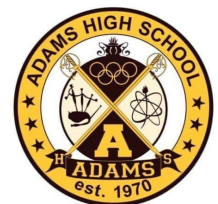
Mentor Benefits

- Share knowledge and experience with students to help them accomplish their tasks, in both engineering and business areas
- Have fun
- Be part of a community and work as a team
- Help others through community outreach
- Help give the students a “real life” learning experience they cannot get in the regular classroom



School Benefits

- Support an outstanding student development program
- Support STEM and business interests in students
- Increase name recognition as a school that helps develop outstanding students
- Gain insight of professionals outside of academia to help set curriculum
- Allows students to see how lessons learned in the classroom can be applied in the real-world experiences
- Help support students through scholarship opportunities
- Use of the AdamBots T-shirt cannon specifically designed for use at the football games

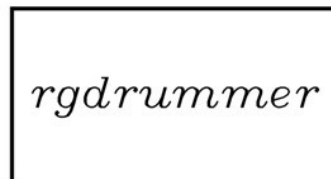


Sponsor Benefits

- An opportunity to market their company
- Reach out to the community in a positive way
- Develop future employees
- Help inspire students to enter STEM and business fields
- Provides opportunity to be good corporate citizens



Friends
and
Family



3.3 AdamBots Core Values

Students and mentors worked together to define Core Values which we believe are key to our success, sustainability and help us to be a role model team.

Gracious Professionalism

We will do the right thing with integrity. We will set positive examples for others to follow. We will compete on an even playing field and will help our allies and opponents be their best. We will also be on our best behavior whenever we are participating on the team; at the school, at competitions, at robotic demonstrations, and at community outreach events. “Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process...In the long run; Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.” – Woodie Flowers

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 will listen to the opinions and observations of others. We will 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 imaginative ways to solve problems. We embrace trying new technology when appropriate. We strive 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 schoolwork, robotics team responsibilities, and life should be integrated in a way that being a member of the team is a rich and rewarding experience.

3Cs: Commitment, Cooperation, 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 that the team leadership should set the example for all team members to follow and help keep us on track with the 3C values.

4.0 Organizational Plan

4.1 Team Structure

Our team is organized into engineering sub-teams and business sub-teams, each with at least one student leader and one mentor. The team also has a Project Management sub-team, which oversees goals and deadlines for the robot. Several mentors fulfill the roles of Team Manager, Financial Manager, and Purchasing Manager. These roles supervise team administration, travel, finances, and purchases. Prior to the build season, students fill out forms ranking their top choices and nominating themselves for leadership positions. Mentors interview and select student leaders and place students on sub-teams based on their interests.



4.2 Human Resources

Recruitment

During the end of May, we start our recruiting process by inviting eighth grade students to apply for the team from our feeder programs. We also ask students from the existing year to re-apply for the next season. We send out communications over the summer to keep students and parents engaged. At the beginning of each school year, we continue our recruiting process by giving the time and place of our first meeting on posters we hang up around our school to promote the robotics team at the school club fair. At the first all-team meeting each year, we give an



overview of our team and what the robotics season entails. Students can then decide if they want to join. We also recruit mentors from sponsors or from the parents of the current or new students. Later in the year, they will attend a training session before *FIRST* season begins. We also hold a “Meet the AdamBots” event every year to recruit new members.

Training

The AdamBots start our training in the fall through both training programs, skills programs, and assembling or disassembling robots. In the past, with guidance from mentors and veteran students, incoming AdamBots created a robot from scratch to demonstrate in the Rochester Hometown Christmas Parade and built our first swerve drive chassis. Through this activity, students began developing relationships with mentors and veteran students at the same time as gaining more hands-on experience working as a team toward creating a robot. Additionally, we held CAD, Programming, and Electrical training sessions for new students. Through this program, new students will enter the *FIRST* season with a knowledge of tools and safety as well as a taste of how the team is structured.

Engineering and Business Skills

In addition to each sub-team’s contribution to the overall team, each sub-team is also defined by the specific real-world skills taught to the students. All students are taught general problem-solving skills, communication, and safety skills to some extent. The AdamBots use experienced mentors and experienced students to teach the relevant skills to each student in

the subteam they are on. This approach helps each student reach their maximum potential in the skills, i.e.:

- Computer Aided Design for those on the CAD team,
- Machining and assembly skills for those on the mechanical team,
- Wiring, pneumatics, connectors, sensors, for those on the electrical team,
- Programming, camera sensing, LIDAR, and JAVA skills for those on the programming team,
- Photoshop and printing skills to those on the imagery team,
- Camera still and video skills, both in taking and editing, to those on the photo/video team,
- Website, WordPress, and layout design to those on the digital media team,
- Order processing and documentation for those on the supply chain team,
- Strategic planning, documentation, selling, presentation, finance, and business skills to those on the Impact and sustainability team, and
- Scouting and strategy to those on the scouting team.

Attendance, Participation and Behavior Expectations

It is important that students are on time to all events, matches and meetings. If a student is unable to attend, they should inform a mentor or student leader of their absence in advance. It is also important that all students regularly attend their own sub-team meetings so that they can not only stay current with the team's progress but also to partake in it. Grades are of utmost importance to our team, the average GPA for the team is usually above 3.9. For a student to remain on the team, they must have passing grades in all classes because we do not want any member's participation in the robotics team to become the cause of failure in their schoolwork. Students are also expected to participate in five community outreach activities throughout the year. Opportunities to sign up and participate are available regularly.

In addition, students are expected to exhibit Gracious Professionalism® at competitions not only for our team, but for other teams as well. We try our best to help other teams whenever any technical or operational issues occur on their side. Students are also encouraged to focus on the competition and avoid playing on an electronic device or other forms of entertainment. Team members must always strive to work together peacefully and cooperatively, remembering to be gracious in winning and losing. Other member expectations can be found in the Student Contract handed out at the beginning of the season.

Safety

Safety of team members is critical. Students and mentors working with the robot at school or in the pit must wear safety glasses. Safety topics are covered in our fall training, and the use of power tools is supervised by experienced mentors. Prior to competitions, the safety team coordinates safety drills with the whole team. More information can be found in our Safety Manual.

EDGE Teaching Method

Our team uses the EDGE teaching method, an effective four step teaching approach borrowed from Boy Scouts of America, to teach team members new skills and concepts. This approach is used consistently by mentors and students. The EDGE teaching method is similarly used to teach a wide variety of skills and concepts related to the AdamBots work, including any Engineering or Business sub-team task. For example, the method could also be used to show someone how to use a camera, update the website, or create items for the Business Plan.

- **Explain** – The trainer explains how something is done.
- **Demonstrate** – After the trainer explains, the trainer demonstrates while explaining again.
- **Guide** – The learner tries the skill while the trainer guides him or her through it.
- **Enable** – The learner works on his or her own under the watchful eye of the trainer. The trainer’s role in this step is to remove any obstacles to success, which enables the learner to succeed.

4.3 Organization of Operational Functions

***FIRST* Robotics Competition (FRC)**

The *FIRST* Robotics Competition runs from January to April, with approximately 4,000 teams participating globally. Teams compete in districts and regionals to earn a spot at the *FIRST* Championship. FRC stresses STEM inspiration by building relationships between students and mentors.

The *FIRST* Robotics Competition is the main season for the AdamBots. All students and mentors participate in FRC, and the organization is as it appears in the chart. By participating in FRC, we inspire and educate our students in preparation for high-level competition.

***FIRST* Offseason**

Following the *FIRST* Championship, teams can sign up for additional independent events. The AdamBots compete in 2-4 offseason events each year. By participating in offseason events, we can train future drive team members. Our potential offseason events include:

- **Michigan Advanced Robotics Competition (MARC I & II)** – Summer robotics competition where our students can practice and have fun
- **Indiana Robotics Invitational (IRI)** – Summer robotics competition, by invitation only, the AdamBots have participated in prior to COVID
- **Kettering Kickoff** – September event in Flint where our students can practice and have fun in the leadup to the *FIRST* season
- **Bloomfield Girls Robotics Competition (BGRC)** – October event in Bloomfield Hills. This all-girls event allows our female students to get additional opportunities to drive and fix the robot



5.0 Operational Plan

5.1 Tasks

During the *FIRST* season, we are tasked to complete a new robot each year within a six-week time frame. Our team also completes many other important tasks. Below are the tasks we work to achieve each year as a *FIRST* team.

5.2 Scheduling

Each Tuesday after school, we conduct meetings that are attended by all student team members. We also meet at the beginning of the *FIRST* season, on the day after the game is announced, to conduct an initial strategy development session and begin the robot design process. Each Saturday, engineering sub-team leaders meet to discuss deadlines and projects that involve multiple sub-teams. Each of our sub-teams meet at staggered times throughout the work week to ensure that there are not too many people in the robot build area. Sub-teams decide what schedule works best for both the students and mentors.

5.3 Communication

Communication within the team is accomplished with team meetings, sub-team meetings, emails, group chats, leader-to-member communication and the website. Students receive important team notifications via Remind or GroupMe, especially during travel. While traveling, we meet nightly to discuss plans for the next day. Our Team Manager sends emails to all team members and parents regarding events that involve the whole team. Student and mentor sub-team leaders send emails to communicate with sub-team members. On our website, www.AdamBots.com, we maintain a calendar for use within our team.

5.4 Project Management

Good project management is vital to our continued success during the *FIRST* build season. Our team utilizes a Project Management Team to help keep our team on task and on schedule. This year we also named a Team Captain, to help facilitate reports and meetings and helps with the schedules.



6.0 Outreach and Mentoring Plan

6.1 Community Outreach

The AdamBots choose to do many community outreach events to give back to our community, to spread awareness of *FIRST*, and to emphasize the importance of social responsibility to team members. To ensure this, students attend 5 total community outreach each year and are always looking for more opportunities to get involved in the community!

Relay for Life

The Relay for Life is a fundraiser walk to support the American Cancer Society. The AdamBots raise money for this event by selling luminaries every summer as well as pink ducks at competitions. Luminaries are placed around a track in honor and memory of those who have died from cancer or who are currently battling it. Our team has been recognized by the American Cancer Society as the top team fundraiser in our area for several years. We have raised money for this fundraiser since we began participating in 2005.



Hunger Walk

The Hunger Walk is a local charity walk created by the AdamBots to support the Rochester Area Neighborhood House and benefit those in our community who are in need. This year, we raised over \$1,050 and collected 400lbs of food. This event takes place in the fall, and participants include members of the AdamBots, Cyber Cats, and FEDS teams as part of Rochester United, as well as children from elementary and middle school teams we mentor and friends and family.



Rochester Hometown Christmas Parade

The AdamBots, along with other local *FIRST* teams, march in the Christmas Parade each December. It is a way to advertise our team along with the *FIRST* community, in the hopes of encouraging more people to join or recognize *FIRST*. In the past few years, we have demonstrated the robot built by the rookie students in our fall training sessions. A few students from each team walk next to these, carrying banners that include the school and *FIRST* team logos.



Halloween Hoot

The Halloween Hoot takes place at the Dinosaur Hill Nature Preserve in the Rochester community every year in October. It is completely run by the community. Children carve pumpkins, teens act out Halloween skits, and members of the Rochester Hills Women's Club provide cider and doughnuts. Since 2002, the AdamBots have cleaned up after the last night of the Halloween Hoot. We take down the decorations and pick up after everyone is gone from the trails.



Operation School Bell

The AdamBots help load trucks for Operation School Bell in the fall. Operation School Bell is the Assistance League's signature program. Chapters research specific needs in their local communities; then develop, fund, and implement programs that support children in need. The goal is to help children succeed in school by providing new school clothing; health assistance, including hearing, vision and/or dental care; and literacy, cultural and higher educational enrichment.



Other Service Projects

In the past years, we collected and donated socks. Each winter, the AdamBots donate toys to the Rainbow Connection and/or to Toys for Tots. We've also baked cookies and delivered them to the fire department and senior living centers in our community. Additionally, we donated \$500 from our Art and Apples fundraiser this year to NOVA Ukraine, an organization that provides humanitarian aid to the Ukrainian people, as well as raising awareness about Ukraine in the United States. Treats for Troops is another program we participate in, in which donated items go to deployed troops and veterans. We also participate in Coats for the Cold, in which team members donate jackets and coats for those in need. We also have made hand-written cards for members of the Older Persons Commission (OPC) to bring them holiday cheer, and we also provide holiday gift donations, usually games, to the Rochester Area Neighborhood house for families to enjoy the holiday season.

6.2 *FIRST* Support

Rookie Team Mentorship

In 2010, General Motors, one of our partners, asked for experienced *FIRST* teams to help rookie teams in Mexico. The AdamBots gladly chose to assist Team 3478, LamBot, from San Luis Potosi, Mexico. Several LamBot mentors flew to Michigan and met with the AdamBots to discuss team structure and organization and the *FIRST* season. We attended regionals in Texas for two years to get to work more with them. Our students and mentors also communicated with them throughout the season to provide suggestions on team structure and robot design. The LamBots won the Rookie All-Star Award at the 2011 *FIRST* Championship. Since then, they've won the Regional Chairman's Award three times, and the Engineering Inspiration Award at the *FIRST* Championship twice.

General Motors asked us to mentor a local Detroit team, 3096 Village Bulldogs. They were a rookie team and faced significant challenges in getting needed support from their school. We continue to mentor them and collaborate with them. In helping this team, we share our designs, offer feedback, and use many of the same methods used when first helping the LamBots.

In 2014, the AdamBots successfully started Team 5436, the Cyber Cats. Students from the local Stoney Creek High School previously came to our team, but we helped them to form their own at their school. After a successful rookie season, the Cyber Cats have expanded their team and acquired a workspace of their own. They've won numerous awards and have qualified for the *FIRST* Championship.

FIRST Season Virtual Calls

Each Saturday during the *FIRST* season, we host a Zoom call with several other teams. Beginning with the LamBots alone, the call now includes eleven other teams across Michigan and Mexico (201, 2224, 3096, 3478, 5213, 5436, 6121, 6832, 7232, 8380). Together we discuss strategy, robot design, team organization, outreach, scouting, Impact Award work and any other topics requiring focus. We make plans to attend competitions with each of these teams when possible.

FIRST Tech Challenge (FTC) Event Hosting

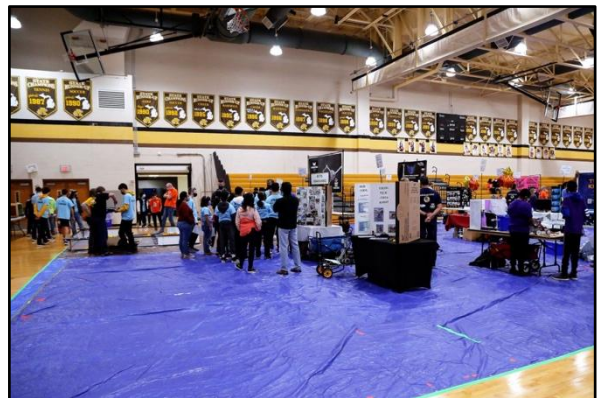
In 2019, the AdamBots hosted and ran Michigan's first-ever FTC League Meet. We cooperated with FRC Teams 201 and 5436 to set up before and clean up after the event as part of Rochester United Robotics. Our team also provided volunteers for queueing and other event functions.

Last year, we expanded our FTC support to host a qualifier. We again worked with the other Rochester United teams to draw volunteers for setup and cleanup as well as queueing, field reset, and judge assistance.

This year we hosted an FLL mock event and supported two other FLL and FTC events, providing workers, judges, and other volunteers. By running these events, we hope to develop the infrastructure of *FIRST* in Michigan to support the growth of FTC.

FTC Mentoring

In 2011, the AdamBots started and mentored an FTC team at our feeder school, Van Hoosen Middle School. Our team mentored both the engineering and business areas of the rookie team. After a brief period of absence, we helped restart that team in 2019. We continue to support them each year including providing financial, administration, and build space support along with the student mentors.



FIRST Lego League Explore (FLE) and FIRST Lego League Challenge (FLC) FIRST Tech Challenge (FTC) Challenge

The AdamBots have supported FLE, FLC, FTC teams throughout nearly our entire history. This year we are mentoring 32 teams. We meet with each team at least twice per week in our building, guiding students to appreciate STEM fields of education and the values of *FIRST*.



FIRST Community Support

At each local *FIRST* competition, we provide many volunteers to assist, including both mentor, student, and alumni volunteers. We support not only *FIRST* season events, but also off-season events such as IRI, MARC and Kettering Kick-off. Volunteers help set up the competition field, administrate the pit area, queue teams, distribute safety glasses, and even coordinate other volunteers. Our volunteering is one way our team gives back to support the success of the *FIRST* community.

Ambassador Program

When an AdamBot student is traveling to another country, usually for a vacation, they are encouraged to participate in our Ambassador Program. Through this program, they take FLC kits, or other robotics materials, and visit schools or other institutions to explain the *FIRST* robotics program and encourage students to pursue STEM. When doing this, they usually wear their AdamBots uniform. So far, students have visited countries like Japan, India numerous times, and England.

6.3 STEM Inspiration

Robot Demonstrations

We demo our robots at different events, including elementary school assemblies, science fairs, sponsor locations, Scout functions and public libraries. For example, this past year, students demonstrated the robot at Long Meadow Elementary's Science Fair and the Lincoln Park Library. We also have an annual robot demonstration at the Adams Gold Rush tailgate, where we engage with our school community and hope to increase interest in STEM. Robot demonstrations allow us to inspire students to have an interest in STEM education, spread awareness of *FIRST* and give partners a first-hand look at the benefits of our partnerships.

7.0 Marketing Plan

7.1 Target Audience

Rochester Adams High School Administration

We market ourselves to the administration and faculty to ensure their strong, continued support through formal meetings, casual conversations, and team demonstrations. We formally invite the principal and faculty to attend events hosted at home. We also extend invitations to administration and faculty to attend all our local competitions. Through our involvement in the school board's Career and Technical Education (CTE) Advisory Committee, we market the value of our team's activity. In addition to CTE, an AdamBots alumni parent is a member of the RCS school board.



Sponsors

Sponsors provide the largest financial support as well as many of our mentors and miscellaneous donations to the team. We target current and potential sponsors through marketing and direct communication to ensure their continued support and to gain new sponsors. Specific students and mentors are assigned to keep sponsors up to date and we have visited sponsors to thank them for their assistance.

Potential Team Members (Students and Mentors)

We market to and strive to recruit team members, both students and mentors, because our people are the most important component of our team. We use in-school and online marketing to get the word of our team out to students and to invite them to apply to join the team at the beginning of the year. We demonstrate our robots at school whenever possible, including pep assemblies. One way we showcase our team in the school is by wearing our spirit wear in class before competitions. We also encourage teachers and parents to mentor the team. The best way we can reach potential team members is through our various outreach and mentoring programs. There, we can encourage interest in STEM, *FIRST*, and the AdamBots.

Rochester United Robotics

The AdamBots have also partnered with the two other high school FRC teams in our district to make a bigger positive impact on our local community. Along with the FEDS, Team 201, and the Cyber Cats, Team 5436, we have done a variety of community outreach including the annual Christmas parade and the Hunger Walk. To maintain relations, periodic meetings with lead mentors from each team are held to discuss activities. We work together to help each other with hosted events.

7.2 Marketing Mediums

Robot Demonstrations / Speaking Events

We regularly participate in a wide variety of events, where we demonstrate our robot and speak to attendees about *FIRST* and the AdamBots. Events include elementary school science fairs and assemblies, Scout meetings, high school pep assemblies, demonstrations at freshman parent orientation, meetings with high school principals, presentations to the RCS School Board and demonstrations at the Rochester Hills Public Library. Our Ambassador Program allows us to market *FIRST* and other STEM education opportunities to our global community.

Meet the AdamBots

Our team hosts an open house called “Meet the AdamBots.” This event has been a successful means for our team to recruit new members. A presentation explaining our team, our history and the objective of the current year’s game is given. Also, those attending are broken up into small groups and led by student guides on a tour where they see our building room and meet students from our sub-teams who explain and present their sub-team’s function and projects. The tour also includes a demonstration of our robot for the current and past seasons.

Imagery: Posters, Robot Graphics, T-Shirts, Flyers, Giveaways

The imagery subteam is an integral part of our marketing, allowing us to become more recognizable and memorable within the *FIRST* community. We strive to be cohesive in every aspect, from team shirts, branding and presentation materials to the website and social media channels, as well as our competition pit displays and the robot's graphics. We also create celebratory and trading t-shirts and give out marketing items at competitions, such as our renowned ducks and team buttons.



Newsletter

We distribute a monthly electronic newsletter to all our partners including sponsors, school administration, teachers, politicians, community leaders, parents, students, and mentors. Subscribers sign up to receive the newsletter on the team website, and an online service called MailChimp is used to email it to subscribers. This newsletter enables our partners to keep up to date with team activities and future plans. It includes information about competitions, outreach, team recognition and awards, a team wish list identifying material and support needs and recognizes our sponsors.

Online Presence

We operate various social media accounts on Facebook (980 followers), Instagram (1,192 followers), Twitter (1,683 followers), and YouTube (134 subscribers). Our team website has also won the World Championship Best Website Award in 2011. Using these tools, sponsor, competition, and community outreach information, as well as team news, is communicated to families, classmates, friends, and members of the community. Our online presence helps build interest in *FIRST* and enables us to communicate with other teams across the globe.

Resource Sharing

The AdamBots share our resources with other teams to help them and market our capabilities. We believe that this form of Coopertition™ helps make all of us stronger. We also believe that sharing our resources and helping others will aid us in our sustainability as others learn of these valuable resources. These helpful documents are in the resources page of our website.

Helpful Documents

Below are documents created specifically for the *FIRST* community to share Technical Training, to show how we run different aspects of our team, and what you can possibly take away from our strategies.

- [Yearly Summary of FIRST Game Rules](#)
One of our mentors, [Rick Drummer](#), creates a summary of Game rules for the new *FIRST* Season. This page contains summaries for all *FIRST* games from 2012 to the present year.
- [Training presentations covering aspects of design choices for key robot sub-systems](#)
One of our mentors, [John Savage](#), has created technical training summaries useful for robot design.
- [Keys To Long Term Success](#)
One of our mentors, [Rick Drummer](#), created this presentation in response to questions about how to sustain a team for long term success.
- [Robot Pre-match Inspection Sheet](#)
A generic robot pre-match inspection sheet to make sure your robot is ready to go before each match. We used a version of this during our successful 2009 season.
- [Scouting Builds Winning Alliances and Strategies](#)
One of our mentors, [Rick Drummer](#), has handled our scouting for many years now. This is a paper he put together to help our Scouting team.
- [Photo/Video Camera Tutorial](#)
One of our mentors, [John Savage](#), created a PowerPoint as a guide for future photographers to refer to when applying their skills.
- [Programming Requirements](#)
One of our mentors, [James Micklas](#), created a PowerPoint a guide for future programmers with our current knowledge of programming requirements.

8.0 Financial Plan

We focus on long-term financial sustainability to ensure success. Financial support comes from three different sources: sponsors, team member fees and contributions and our Art & Apples Festival parking lot business. We have contingencies in place, such as leaving “seed” money for the following year, so that we will still be in a viable financial condition if we lose a sponsor, fundraiser or have some other event that results in a loss of funding.

8.1 Sponsors

Sponsors are the primary method in which we receive financial support. Our goal is to obtain enough funding to cover the costs of both *FIRST* registration fees and robot parts. Currently, we have 10 sponsors and receive donations from several friends and family of team members. We also strive to obtain at least one new sponsor each year and keep all sponsors from the previous year. This is accomplished through partner thank you notes and recognition, and our monthly electronic newsletter.



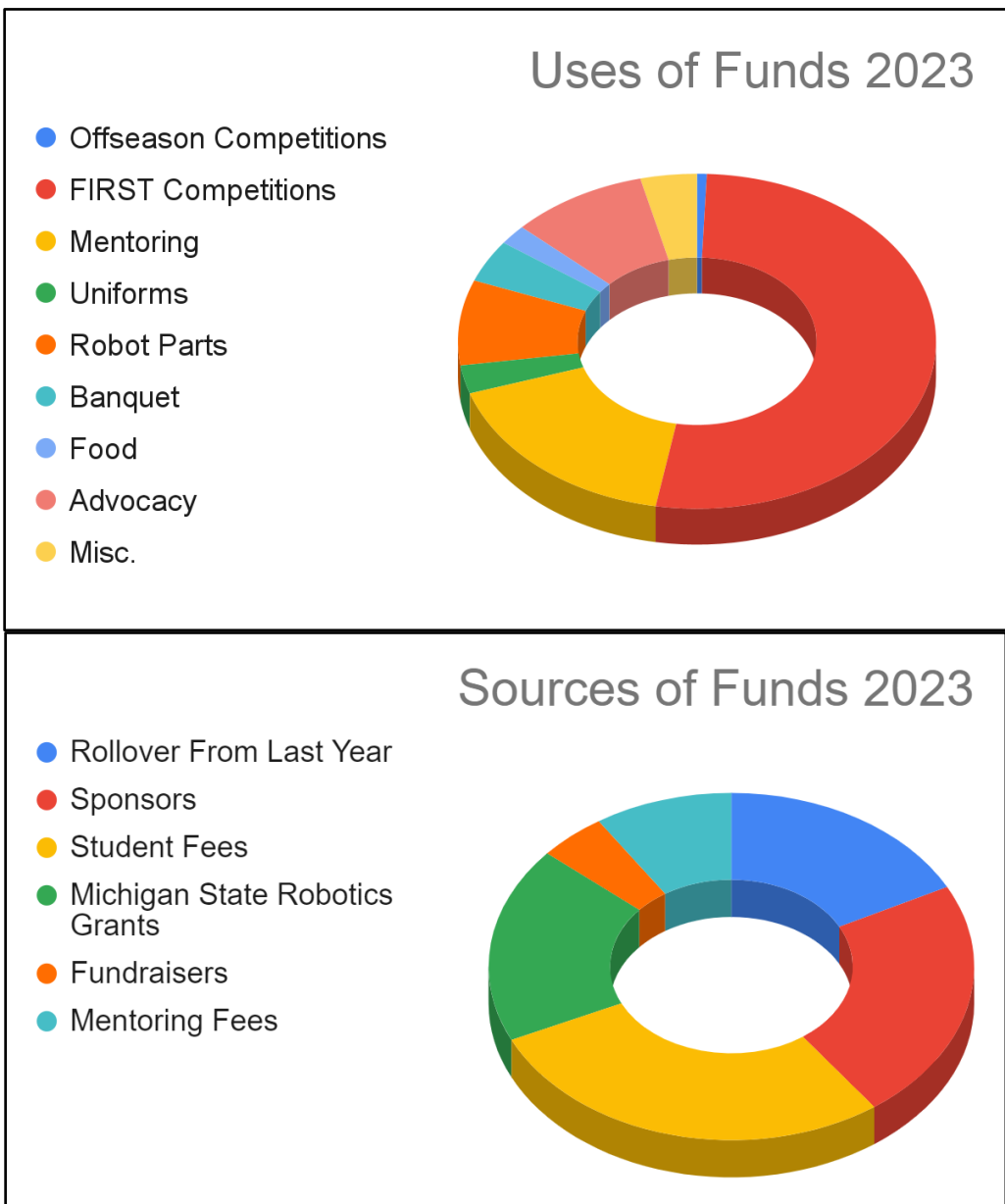
8.2 Member Contribution

Students and mentors also contribute financially. Students pay annual registration fees which help pay for team activities. There is also an additional fee that helps pay for team travel to overnight events. This includes bus transportation to Michigan district and state championship, out-of-state regional, *FIRST* Championship and off-season competitions. When we travel out of the area for events, students and mentors pay half of the cost of travel and lodging.

8.3 Parking Lot Business

Each September, AdamBots students, parents, and mentors operate a profitable parking lot business during a three-day arts festival, Art & Apples Festival, which is held in the local Rochester Park. This festival is a well-known tradition within the community and attracts thousands of people from a wide area. Funds raised go toward charity and team expenses.

8.4 2023 Financial Graphic



8.5 Financial Contingency Plan

The AdamBots created a financial contingency plan to prioritize spending in case of budget cuts.

Tentative		Budget Item
1	\$6,000	Registration for two local district events
	\$2,000	Supplies for one competition robot
	\$2,000	Basic team spirit wear
2	\$6,000	State Championship registration
	\$6,000	<i>FIRST</i> World Championship registration
	\$25,000	<i>FIRST</i> World Championship Travel
3	\$500	Third District event
	\$2,000	Youth STEM programs
	\$1,000	Registration for local offseason events
4	\$3,000	Expansion of equipment (tools, computers, cameras, etc.)
	\$3,500	Banquet celebration
5	\$5,000	Additional team spirit wear
	\$1,000	Pit marketing materials

9.0 Strategic Plan

9.1 Strategic Planning Process

The AdamBots Strategic Plan was created in 2014. Students and mentors work together to review and update it annually. The process begins with our mission to inspire growth and appreciation of STEM, business, and career skills. To accomplish this, we've broken it into five key team strategies. Then, we analyze our team internally (strengths and weaknesses) and externally (opportunities and threats) to create a list of actionable items. We then review the list in the context of each key team strategy to structure conversations on our plans for the next few years.

9.2 Team Strategies

The AdamBots have a Strategic Plan that supports the team's mission statement and is used to make team improvements, manage risk, and enhance team sustainability. The Strategic Plan identifies five long-term team strategies with supporting action plans.

Team
Grow a Model Team
Learn and Continuously Improve by Building a Successful Robot
Develop Strong Team Leadership
Develop Excellent Team Financing and Partner Relationships
Develop the <i>FIRST</i> Community

9.3 SWOT Analysis

The AdamBots completed a SWOT analysis for all five strategies to identify team strengths, weaknesses, opportunities, and threats. The composite SWOT analysis chart below combines the SWOT analysis for all five strategies.

Composite SWOT Analysis for all AdamBots Team Strategies	
Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Large, skilled, accessible body of long-term mentors 2. Large body of students organized in strong, sustainable structure 3. Students and mentors with knowledge and interest in wide variety of fields 4. Strong sponsor and financial partnerships 5. Succession planning from youth STEM programs and sub-team structure 6. Development of real-world skills such as communication, collaboration, and career preparedness 	<ol style="list-style-type: none"> 1. Lack of succession planning for specific mentor roles 2. Most CAD skills not taught in school classes
Opportunities	Threats
<ol style="list-style-type: none"> 1. Focus on developing student skills 2. School involvement 3. Dedicated offseason group for developing new engineering prototypes, skills, and techniques 4. Learning from industry experience 5. Growing school administration support 	<ol style="list-style-type: none"> 1. Loss of mentors in key roles 2. Loss of financial support 3. Loss of build space 4. Loss of school district support 5. Loss of robot transportation

9.4 Action Plans and Risk Mitigation

AdamBots Team Strategy: Grow a Model Team		
Action Plan	Responsible	Estimated Completion
Maintain past efforts to grow a model team	Student and Mentor Leaders	Continuous
Develop build space, including expansion, space utilization, and equipment	Lead mentors	Continuous
Gain at least one new mentor every year	Financial Manager	Annually by end of year
Retain mentors for 3+ years	Lead mentors	Continuous

Grow a Model Team

Every day that we come in to work on the robot, we keep in mind that we want to strive to be the best that we can be. This includes upholding *FIRST*'s mission, assisting our community, being respectful to all, creating a strategy to ensure student participation, and always looking for a way we can improve.



**AdamBots Team Strategy: Learn
and Continuously Improve By Building a Successful
Robot**

Action Plan	Responsible	Estimated Completion
Maintain past efforts to learn and continuously improve	Sustainability Subteam	Continuous
Invite experts to share knowledge with the team	Subteam student leaders and mentors	Continuous

Learn and Continuously Improve By Building a Successful Robot

We strive to teach students STEM skills, leadership, project management, and collaboration. We strive for our students to lead our process for building the best robot we can each year and by expanding our teaching and engineering capabilities.

Action Plan	Responsible	Estimated Completion
Maintain past efforts to develop strong team leadership	Lead Mentors	Continuous
Maintain and monitor subteam depth charts	Team Manager	Annually
Continue new mentor training “Mentor to Mentor”	Experienced mentors	Continuous

Develop Strong Team Leadership

We strive to develop mentors and student leaders who can manage teams and bring the team as a whole forward.

Relationships		
Action Plan	Responsible	Estimated Completion
Maintain past efforts to develop team financing and partner relationships	Sustainability and Communication Subteams	Continuous
Gain at least one new sponsor every year	Financial Manager	Annually

Develop Excellent Team Financing and Sponsor Relationships

A solid financial plan ensures we can support achieving our mission.

AdamBots Team Strategy: Develop the <i>FIRST</i> Community		
Action Plan	Responsible	Estimated Completion
Start a <i>FIRST</i> team at every K-12 school within Rochester Community Schools	Rochester United Robotics leadership	Early 2023
Work with <i>FIRST</i> in Michigan to support multiple rookie FRC, FLC, and FLL teams each year	Team Manager	Annually in September
Share information on ways students can get involved in the global FRC community	Impact and Communications Subteam	Annually in October

Develop the *FIRST* Community

We believe that by starting *FIRST* teams and helping existing *FIRST* teams, we can expand our ability to foster growth and appreciation of STEM, business, and career skills in students.

10.0 Advocacy Plan

10.1 SASA Advocacy

The Student Association for STEM Advocacy (SASA) is a campaign that helps to develop student advocates to expand access to STEM opportunities to underprivileged individuals and underserved communities. SASA has helped to develop 2000 informed, developed, and confident student advocates, which include current Adambots. The Adambots have attended both the State and National Level SASA conferences.

National Conference(NAC)

The National Conference meets in Washington D.C where students discuss STEM advocacy with members of Congress or their staff. They talked about spreading awareness over STEM and supporting Robotics nationwide. The Adambots were able to continue to develop a variety of skills including public speaking, presenting, and leadership.



State Conference(MAC)

The Michigan Advocacy conference is an annual student-led conference that takes place in Lansing, MI. Students can discuss STEM advocacy with state officials and advocacy experts, as well as lead meetings. The Adambots participated in MAC this year and gained knowledge on advocacy, and Michigan's role in STEM education.



10.2 Rochester United Advocacy

Each week the Adambots meet with the Rochester United robotics group, which includes Team 201, The FEDS and Team 5436, The CyberCats. We discuss outreach and STEM advocacy in the Greater Rochester Area. We plan meetings with local and school officials and have met and presented to Rochester Hills Mayor Barnett. This helps contribute to our team sustainability, as it ensures that there is enough STEM interest to keep robotics running in our community.



11.0 Measuring Success

11.1 Key Performance Indicators

Measuring our success as a team is important to Adambots because it allows us to determine if changes and adaptations to our team have a positive or negative impact. The AdamBots use key performance indicators (KPIs) to measure changes in overall team success. We determined our KPIs by examining our core values, mission statement, and objectives.

Indicator	Measuring Method
Competition Performance	State/District Ranking Points
Student STEM Interest	Participation in STEM clubs at Adams High School
Alumni STEM Interest	Percent of graduates that move on to STEM fields
Student skills	Annual survey
Team Environment / Core Values	Annual survey

11.2 Implementation

Annually, the team meets to review the Strategic Plan, usually after the *FIRST* season competitions are over. Data from our KPIs helps to facilitate discussion and back up modifications with evidence. The Sustainability Subteam and mentors meet to analyze the data before these meetings.