Business Plan for Financial Year 2015

Joliet Township High School District 204
300 Caterpillar Drive, Joliet, Illinois, 60436
Website: Robotics.jths.org
Twitter: @JolietCyborgs

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1.0 Executive Summary

1.1 Mission Statement

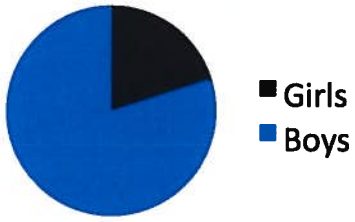
The Joliet Cyborgs would like to become not only a well-known team in the FIRST Robotics program but also a well-known name in our community in the near future. We plan to recruit as many students interested in Science, Technology, Engineering, and Mathematics (STEM) as possible from the Joliet Township High School District 204. We believe that those students interested in STEM are the engineers and scientists of tomorrow.

1.2 Date the Team Began

- Fall 2011

1.3 Number of Team Members

- 35 Total Members
  - 28 Males
  - 7 Female



1.4 Team Location

- Joliet Township High School Administration Center, *300 Caterpillar Drive, Joliet, Illinois, 60436*

1.5 Current Sponsors

Sponsor	Description
Caterpillar	Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial turbines and diesel-electric locomotives.
Caterpillar Foundation	*Since 1952, The Caterpillar Foundation has been dedicated to transforming lives in the communities where we live and work around the world.*
Vulcan Materials Company	Vulcan Materials Company is the nation's largest producer of construction aggregates—primarily crushed stone, sand and gravel—and a major producer of aggregates-based construction materials, including asphalt and ready-mixed concrete.
KWM Gutterman Inc.	KWM Gutterman builds the highest quality gutter machines. They have also invented the Ironman.
Radiometrics Midwest Corporation	Radiometrics is an American Association for Laboratory Accreditation (A2LA) accredited independent Electro-Magnetic Compatibility (EMC) testing and engineering center whose primary goal is to help their clients achieve compliance with domestic or international EMC/EMI specifications.
R Berti Building Solutions	R. Berti provides building solutions to a wide range of commercial construction projects. Integrity, and an unwavering dedication to client satisfaction are hallmarks of their organization.

1.6 What Team 4241 Does

- Train new team members during off season in CAD, programming, marketing, and web design.
- Host/demonstrate community event.
- Conduct fundraisers

1.7 SWOT Analysis

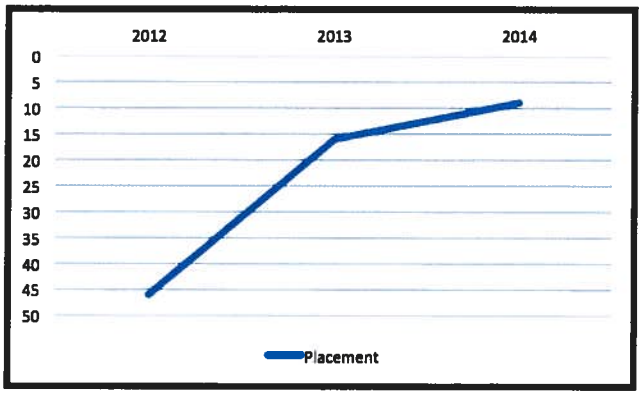
Strengths • Multiple schools • Computers and CAD labs • Interested students • Skilled mentors • Programmers • Different personalities • More people who know how to use CAD • Sponsorship	**Weaknesses** • Funding • Recruiting skilled students • Putting too much work on one person.
Opportunities • Sponsors • Recruiting Mentors • More donations • Community outreach • Fundraising • Recognition at schools • More off-season competitions • Students taking initiative • New technology	**Threats** • Loss of sponsors • Change in objective • Loss of students • Loss of mentors • Loss of focus • Over dominance

2.1 Team Summary

We are the Joliet Cyborgs, Team 4241 of Joliet Township High School District 204. Our team consists of students from both Joliet Central and Joliet West Campuses. We are a student run program, assisted by mentors to help achieve our goals. This will be our fourth year competing in the *FIRST* Robotics Competition. With the assistance of new sponsors, motivated members and our own private workshop, we have improved greatly over the years. The Joliet Cyborgs consists of four sub-teams. The design team incorporates cad/inventor skills into the design of our robot. The build team utilizes the designs created by our design team to create our final product and to generate the electronics to make the robot function. The programing team uses code to control the robot in completing tasks with relation to the challenge. Finally, the media team uses marketing skills and software design to aid in marketing the Joliet Cyborgs. Even when separated into smaller groups, our team works as a whole. Like our slogan says we are, *"half man, half machine, ALL TEAMWORK."*

2.1 History and Background

- Rebound Rumble - 1st Competition
  - Season 2012
    - 46th Place
- Ultimate Ascent
  - Season 2013
    - 16th Place
- Aerial Assist
  - Season 2014
  - 9th Place
- Recycle Rush
  - Season 2015



Joliet Cyborgs was founded in 2011 when the University of Illinois Extension approached the administration at Joliet Township High School and asked if we would be interested in forming a robotics team to compete at a national level in the Midwest Regional. Our answer of course was a definitive yes. With dedicated staff and students, we began our journey to create a District robotics team. Season 2015, is our fourth year with *FIRST* Robotics. We have faced many challenges over the four years, but have drastically improved as well, such as gaining our own personal workspace, acquiring new mentors, and increasing our resources. By increasing the attention spent on rules and safety, we have boosted our productivity greatly. We inspire to continue this upward movement in our team.

2.2 Team Rules

- Hard work pays off – working hard on the robot during the season will help us win the competitions
- Be respectful – don't put anyone down, listen to others while they are talking
- Embody the 7 JTHS character traits:
  - Confidence
  - Integrity
  - Responsibility
  - Tolerance
  - Compassion
  - Respect
  - Perseverance
- Organize workspace – never leave tools, or anything else out of its place, always put it back where it belongs
- Be prepared – come to each meeting knowing what you are doing
- Stay on task – always complete what you started, if finished find out what you can do to help teammates.

2.3 Team Organization

Team Organizer

- Ensure the team stays on task and work is completed on time.
- Keep the parents informed.
- Write agenda and run team meetings.

Mentors

- Provide guidance to the team and the projects.
- Teach new skills to improve the team.
- Coaches the team during the construction of the robot.

Project Leader

- Organizes the team.
- Provide guidance to the team leaders.
- Represents the team.

Team Leader

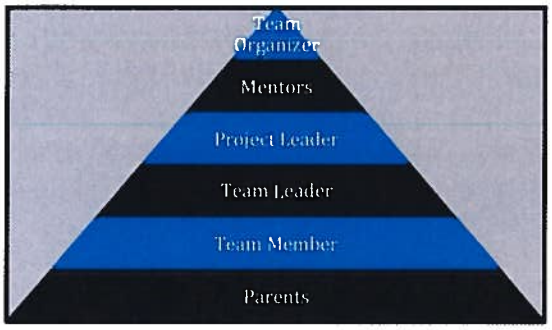
- Organizes the individual teams.
- Ensure the team stays on task and work is completed on time.
- Provide guidance to the team members.

Team Member

- Keep motivated.
- Work hard at every meeting.
- Be prepared.

Parents

- Be supportive.
- Contribute to the team.
- Get involved with the team.



2.4 Technical Structure

Team Organizer is the District Project Director for JTHS who is responsible for securing sponsors and mentors. For the team organizer, communication is key. Our team organizer keeps all the levels of our team including our sponsors up to date on the newest information about our team and events. The Team Organizer is also responsible for working with the students to conduct fundraising activities and marketing materials.

Both internal and external mentors are responsible for working directly with the students on designing, programming and building a functional robot and creating marketing materials for the team. The primary responsibilities of the mentors are to provide guidance and direction in the construction of the robot.

Representing the students is our project leader. Our student project leader is responsible for communications between mentors and the various teams. The project leader maintains the flow of communication and information from one team to another.

The team leaders communicate the information from the project leader to their team members. This ensures effective communication and collaboration between teams. The team leader keeps the team members organized by providing guidance for the daily tasks.

Team members execute their individual team responsibilities. This guarantees the highest level of efficiency.

Parents are critical in providing additional supports to the team as a whole.

2.5 Goals

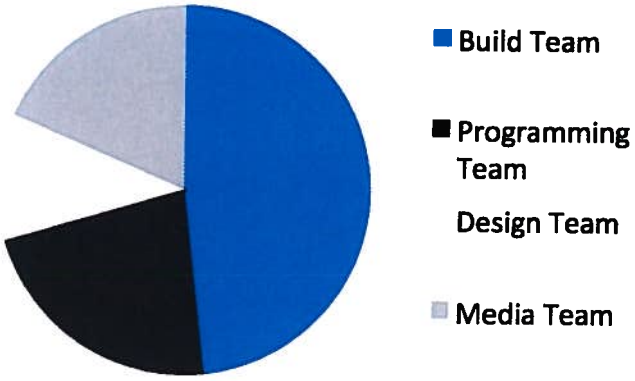
2.5.1 Short Term

- Show commitment by attending every meeting
- Get our name out in the community
- Increase viewership on social media websites
- Get more sponsors as well as work to maintain current sponsors
- Show respect for reasonable and creative ideas
- Push our limits
- Create and communicate our organization for the event
- Show team spirit (signs in the stands)
- Recruit individuals who know electronics
- Take initiative in learning new skills
- Scout other teams before and during competition
- Record daily progress and what our team does through video (multiple videos with different themes)
- Achieve an award at the competition
- Submit award applications through STIMs
- Implement a pneumatics component in our robot
- Complete research independently
- Design the process for build season communication
- Identify roles and responsibilities at competition
- Read emails

2.5.1 Long Term Goals

- Get recognition by other teams at competition for good reasons
- Show community outreach for grade school (K-8)
- Host multiple fundraisers throughout the year
- Create a calendar for the fundraisers
- Recruit more enthusiastic members
- Acquire an ample list of sponsors in the upcoming years

3.0 Teams



3.1 Build Team

The Build Team utilizes the designs created from our Design Team to create our final product.

Build team has set responsibilities such as:

- Construction of the robot
- Trouble shooting the final design
- Building prototypes

Team Members:

- Cody Tuider
- Josue Mateo
- Miguel Gutierrez
- Nick Machacek
- Dyllan Potter
- Jack Lewis
- Kyle Gerstenkorn
- Nick Smith
- Blake Wiles
- Spencer Schmollinger
- Donald Walker
- Eric Vargas
- Collin Mardian
- Jake Blauuw
- Zach Lindley

3.2 Programming Team

The Programming Team utilizes code to control the robot in completing tasks with relation to the challenge.

Programming team has set responsibilities such as:

- Setting up code that allows the robot to function.
- Setting up controls to connect the coding with the robot to a remote controller.
- Testing the coding to ensure the programming is working properly.

Team Members:

- Yesenia Tinoco
- Advanna Walker
- Josue Gomez
- Clayton Pelzer
- Josh Fry
- Juan Gomez

3.3 Media Team

The Media Team consists of members who utilize marketing skills and software design to aid in representing the Joliet Cyborgs

Media team has set responsibilities such as:

- Fundraising.
- Designing logos, T-shirts, fliers, flags, banners, and pamphlets for the team.
- Manage Team events
- Keeping the website and other social media up-to-date.
- Video graphing and photographing material.
- Setting up standards for upcoming years.

Team Members:

- Lauren Hawthorne
- Josh Merrimam
- Will Stapp
- Luis Vega
- Dialah Azam
- Julieanne Zamudio

3.4 Design Team

The Design Team has organized its members to be open minded and incorporate creative cad/inventor skills into the design of our robot.

Design team has set responsibilities such as:

- Being up-to-date on what designs need to be done, edited or dimensioned.
- Each member being responsible for their specific task
- Reporting to the leaders with their finished designs and or questions, if help is needed.
- Taking initiative to work on any other designs that have to be completed.
- Presenting those ideas/designs to the mentors and other leaders.

Team Members:

- Felipe Reyes
- Amanda Marshall
- Chris Trevino

4.0 Financial Plan

4.1 Team Budget

Income

Sponsors

Cash Donations..... +$14,500

Fundraising..... +$992

Total Income..... +15,492

Competition Registration Fees

Midwest Regional..... -$5,000

Central Illinois..... -$4,000

Robot Parts and Materials

Robot Parts and Materials..... -$4,000

Marketing

Team Marketing..... -$500

Miscellaneous..... -$908

Travel Expenses

Buses for competitions..... -$3,000

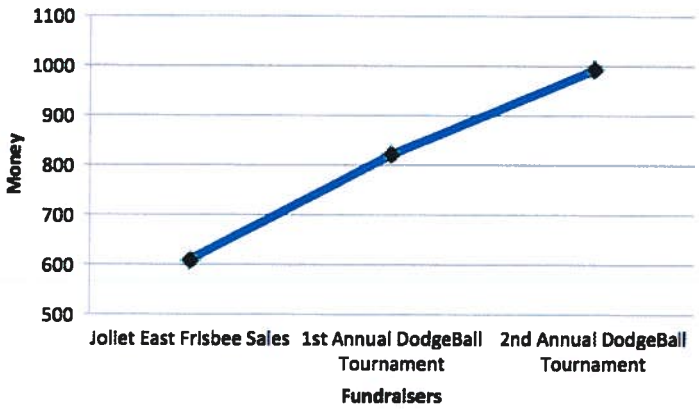
Total Expenses..... -$17,408

4.2 Fundraising

4.2.1 Previous fundraisers

Joliet East Frisbee sales:

On July 24th, 2013 the team organized a Frisbee sale for the Joliet Township high school Alumni Association East all graduated classes high school reunion. We sold Frisbees for $5.00 to anyone who was there. At the end of the night the Alumni Association bought all the remaining Frisbees that we did not sell. We gave away over 500 Frisbees, and made $610.



1st Annual DodgeBall tournament:

On November 5th, 2013 the Joliet Cyborgs hosted a dodgeball tournament at Joliet Central high school. We sold concessions, and had prizes donated for the canned food raffle. The profit made after the expenses was $821.

2nd Annual DodgeBall tournament:

On November 18th, 2014 the Joliet Cyborgs hosted our second annual dodgeball tournament at Joliet Central high school. We sold concessions, and had prizes donated for the canned food raffle. The profit made after the expenses was $992.

4.2.2 Future Fundraisers

Dodge Ball Tournament:

The team will host the dodgeball tournament annually at Joliet Central.

Pancake Breakfast:

The team will host a breakfast to recognize the achievements from this season.

4.3 Sponsorship Plan

Bronze Sponsor $10-$99 or in-kind donation:

- T-shirt & Thank You Letter
- Competition invite

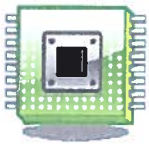
Silver Sponsor $100-$999 or in-kind donation:

- T-shirt & Thank You Letter
- Competition invite
- Business name and logo on website
- Recognition at community event in February

Gold Sponsor $1000-$2499 or in-kind donation:

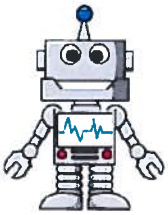
- T-shirt & Thank You Letter
- Competition invite
- Business name and logo on website
- Small Business name on shirt
- Small logo on robot
- Recognition at community event in February

Platinum Sponsor $2500-$4999 or in-kind donation:



- T-shirt & Thank You Letter
- Competition invite
- Business name and logo on website
- Medium Business name and logo on shirt
- Business logo and name in pit
- Medium logo on robot
- Recognition at community event in February

Cyborg Sponsor $5000+ or in-kind donation:



- T-shirt & Thank You Letter
- Thank you letter
- Competition invite
- Business name and logo on website
- Large Business name and logo on shirt
- Large Business logo and name in pit
- Large logo on robot
- Recognition at community event in February

5.0 Community

5.1 Community Outreach Program

We the members of the Joliet Cyborgs will teach kids K-2 from the Joliet area the basics of robotics. We believe everyone should have a basic understanding of how all their technology that they use every day works. To teach the kids we will be using the Lego NXT kits that will be provided by JJC. The kids will be from the Joliet area and will be of grades K-2. As for a location we'll hope to collaborate with JJC and use their campus and equipment for this community outreach program. After having this first program at JJC we hope that by the next time we have one we will have our own equipment and location completely separate from JJC and JTHS. We hope to extend our program to older kid's grades 3-5 and 6-8 as we obtain more resources and acquire grants. This community outreach program will be completely free to the participants and will always be free to the community. By doing this we hope to make a huge impact on the Joliet community.

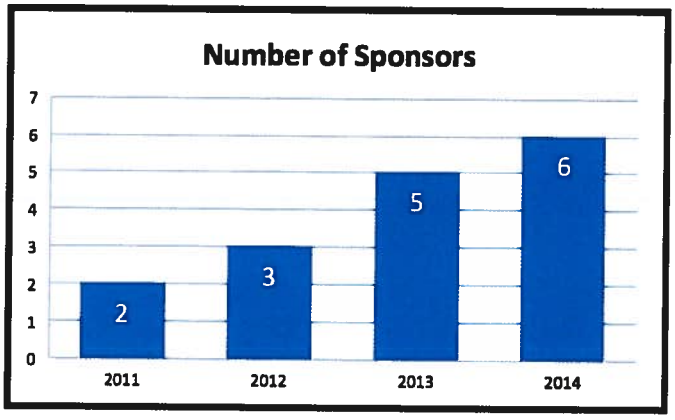
5.2 Mentorship Opportunities

Mentor Role	Description
Design	Teach students how to use designing programs such as CAD and Inventor.
Fabrication	Use the designs made by the design team to fabricate the chassis and other parts for the robot.
Build	Support students with the build of the robot and the use of necessary tools.
Safety	Guide the students through safety steps and assign students to be in charge of safety procedures.
Programming	Assist students to program the robot for a particular task.
Media/Marketing	Aid students in designing websites as well as putting the team's name out there. Assist students in organizing community outreach opportunities.
Electrical/Pneumatics	Help students learn how to use electronics, circuit boards, and pneumatics.
Project Management	Work with all students to set deadlines and meet goals.

5.3 Current Mentors

- Ken Minor, Co-Owner of KWM Gutterman, Inc.
- Mike Rollinger, Lean Specialist for Vulcan Materials Company
- Christopher Carlson, Technical Manager at Radiometrics Midwest Corporation
- Thomas Connelly, Instructor at JTHS
- Christopher McGuffey, Instructor at JTHS
- Karen Harkin, Director of Technology at JTHS
- Carol Collins, District Project Director at JTHS

5.4 Sponsor Relationships



- Visit Caterpillar and tour facility annually.
- Vulcan Material provides two mentors who work directly with students year round on robot design in AutoCAD.
- The owner of KWM Gutterman, Inc. mentors students on design and the build aspects of a robot.
- Radiometrics Midwest Corporation provides us with a mentor who works directly with students on the electronics of a robot.

5.5 Communication Plan

- Announcements on campus SNN/TNN.
- Display the event in pep rally, and assemblies.
- Have a fan bus to the competition.
- Post up flyers around the school about the competition.
- Have a profession banner in each school advertising the robotics team.
- Have a robotic team page in the yearbook.
- Improve our social media sites.
- Appearance on the radio and local TV stations.
- Community exhibition.