2014

Business Plan & Risk Management Plan

Red Alert Robotics

***FIRST®** Team 1741*

Center Grove High School

2717 South Morgantown Road

Greenwood, IN 46143

www.redalert1741.org

www.usfirst.org

Table of Contents

7.2.6 In Case of Snow and/or Ice Storm

7.2.7 In Case of Epidemic

7.2.8 In Case of Tornado

7.2.9 In Case of Flood

7.2.10 In Case of Leadership Incapacitation

7.2.11 In Case of Severe Injury

7.2.12 In Case of Loss of Key Mentor(s)

TEAM BUSINESS PLAN

1 MISSION AND VISION

We create leaders by giving students real world problems to solve, which gives them experience in more than just science and technology.

1.1 MISSION STATEMENT

FIRST® Team 1741, Red Alert Robotics, will operate in the spirit of *FIRST®* in our minds and actions. We will operate in *FIRST®*'s image with quality, safety, Gracious Professionalism®, and respect; inspiring future generations to incorporate the core values of *FIRST®* into their lives.

1.2 VISION STATEMENT

FIRST® Team 1741 Red Alert Robotics believes that one day we will be recognized by our community for spreading inspiration in science and technology to persons of all ages, and be known throughout the FIRST® community as a model team.

Our Vision For 1741's Future

Us

Our students will learn engineering, business, as well as life skills and use them throughout their careers.
Our team, students, parents, and community will understand the bigger picture of *FIRST®.*
We will not be afraid to be ourselves.
We will train students in leadership, build, design, business, and digital media to prepare them for success.
We will be successful while also maintaining good character and Gracious Professionalism®.
We will continue to be inspired to be the best we can be as well provide positive role models to our Jr. FLL, FLL, and FTC teams.

Outreach

We will inspire and encourage our community to take part in STEAM.
We will help make STEAM more accessible to visually or hearing impaired students.
We will help rookie and developing teams on their way to success.

We will continue to provide guidance to teams in need of help.
We will sustain and lead while creating more FIRST® teams from Jr. FLL to FRC.

Building

We will do our documentation while we are building our robot.
We will have a functioning robot to work with the third week of build season.
We will improve our communication and student leadership skills.

Competing

We will win all of our matches for our alliance.
We will be a prime example of Coopertition® and Gracious Professionalism®
We will win our way to World and win an award there.
We will win a blue banner for the robot.
We will win on Einstein without a mentor even touching the robot.
We will win the World Chairman's Award.

This Dream Wall was revised at a May 2013 meeting where nearly every student, mentor, and parent was present. Participants were asked to imagine they were in the same meeting in May 2014.

1.3 Team History

FIRST® Team 1741 Red Alert Robotics is located at Center Grove High School in Greenwood, Indiana, USA. For the past nine years, since our team began in March of 2005, Red Alert has been led by a group of students, mentors, parents, and the Center Grove School Corporation, focused on spreading the mission of *FIRST*®, "To inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership."

FIRST® Team 1741 Red Alert Robotics is located at Center Grove High School in Greenwood, Indiana, USA. Since the beginning, Red Alert has been led by a group of students, mentors, and parents focused on spreading the mission of FIRST®. In 2005, Center Grove School Corporation noticed a void in their school activities with regards to science and technology. Summer Ehresman, a computer education teacher, and two families, the Baxter's and the McCoy's, decided to form a FIRST team to fill the vacancy. They were the founding mentors of Red Alert Robotics. Linda McCoy and Sharon Baxter established the Non-engineering side of Red Alert Robotics (NEngA), and were the founding members of the Red Alert Robotics Parent Organization (RARPO), a non-profit organization, formed in 2008, run by parents in order to sustain our team. Steve McCoy and Dwight Baxter founded the Engineering side of the team teaching

student's life skills in science and technology. Over the years we have had a lack of consistency with corporate sponsors, teacher connections with our school, and growth of student members and mentors. In August 2012, Mark Snodgrass became our new teacher sponsor and head coach, being instrumental in enhancing team development as well as growth and raising more funds for our team. Since the founding year of FIRST® Team 1741, Red Alert Robotics has steadily grown from fifteen students and five mentors to sixty dedicated students and twenty-two passionate mentors, with thirty-three percent of the students being female.

1.4 BRANDING

To protect valuable FIRST® Team 1741 Red Alert Robotics assets and help build and maintain a strong and consistent visual identity for our team, please keep to this exemplary of our logo, do not crop, change colors, or rotate. This logo may be the only one used to identify Red Alert Robotics with the only exception of a black and white version also shown below. This is the logo that has been utilized for the last three seasons:

1.5 Quick Facts

Team Name	FIRST® Team 1741 Red Alert Robotics
Founding Year	March 2005
FIRST® Rookie Year	2006 (build season)
Current Team Students	58
Number of Female Students	18
Percentage of Minority Students	12%
Team Mentors	22
Mentors With No Child On The Team	15
Number of College Mentors	1
Number of Female Mentors	2
Major Corporate Sponsors	Red Alert Robotics Parent Organization, Rolls Royce, Center Grove Education Foundation, Indiana Department of Education, Transformation Trust Inc., Praxair, Tech Point Youth Foundation, Stadium Graphics.
School Corporation	Center Grove High School
Located in	Greenwood, Indiana
Team Colors	Red, White, and Black
Logo	Gear

Year	Robot Names
2006	The Revolver
2007	Mantis, IRI: Nessie
2008	Thaddeus
2009	µ and Sherman
2010	Scorpion and Kirby
2011	Sampson, Destroyer of Worlds, Minibot: He-man, Master of the Universe; Squeaky, Minibot: Pipsqueaky
2012	Swish and Mordecai
2013	Whisbee and Rizzler
2014	Jaws and Inertia

2 WHO WE ARE UPDATE

We are the robotics team for Center Grove High School, *FIRST®* Team 1741 Red Alert Robotics (http://www.redalert1741.org/), located in Greenwood, Indiana, a suburb of Indianapolis. We compete in an international robotics league with more than 4,000 other high-school-aged teams. *FIRST®* (www.usfirst.org), For Inspiration and Recognition of Science and Technology, has robotics leagues for Kindergarten-2nd grades: Jr *FIRST®* Lego League (Jr. FLL); 3rd-8th grades: *FIRST®* Lego League (FLL); 7th-12th grades: *FIRST®* Tech Challenge (FTC); and our league of 9th-12th grades: *FIRST®* Robotics Competition (FRC). Each league is given a real world problem to solve requiring creativity, mathematics, science and technology, and a great deal of teamwork.

We have six weeks to design and build a 120 pound robot that competes in a game with and against other robots. This challenges us to accomplish tasks that relate to real world problems and involves Coopertition® and Gracious Professionalism®. Coopertition® is a mix between competition and cooperation and is put in place because we work with randomly selected alliances of three robots to play against another alliance in each match at tournaments. Gracious Professionalism® and Coopertition® embraces the spirit of *FIRST®* in competing against everyone, but working together for the greater good and being friendly and proficient.

We have a budget of about $60,000 annually and run like a business with an organizational chart and a Board of Directors. Students play important roles by not only designing and building a robot each season, but by creating the business plan, the web site, graphics, communications, safety plans as well as organizing outreach events and reaching out to sponsors. Funding and other resources come primarily from community sponsors, family, friends, and our school. We are incredibly fortunate to have a room in our high school dedicated to the team as well as having access to the high school's technology rooms and equipment which includes computers with CAD and animation software as well as work rooms with equipment for construction.

We are a student lead team which means our operation requires students to develop collaboration, communication, and cooperation skills. Students must work and communicate with a maturity level higher than that of an average high school student, as well as be flexible enough to accommodate to the diversities that both the mentors and teammates bring. Our mentors guide us and enable us to grow in our talents, knowledge, and leadership qualities.

We have set up our team, to have leadership tiers. Each captain has an assistant directly underneath them learning what they do and how to do it. Once the captains depart the team, their assistant captain can step up and know exactly how to run our team. This program was made so that the team's expertise does not leave with the seniors when they graduate.

2.1 Sustainability with Our Students

We are committed to building a better "us". Students gain transferrable skills in leadership, public speaking and business, designing and construction, along with self-discovery, self-esteem, and teamwork. We build our strength in these fields through unforgettable memories and experiences geared towards inspiring students to pursue STEM fields.

During the off-season our team meets once a week. During these weekly meetings we hold training sessions for new students wanting to join the team as well as regular meetings to perform outreach and to enhance our skills and teamwork. The training classes we teach include teamwork, Chairman's, scholarships, programming, electronics, scouting, CAD, leadership skills, machining, drivetrain, and safety. Before the build season begins we hold several design exercises to demonstrate the design process to our students in order to give them can an idea of what it takes to design a robot. During the design exercises, students must partner with other team members to design certain tasks

such as a roller coaster, Jaguar box, a spaghetti tower, and a t-shirt canon robot. Grades are extremely important to our team. In order to travel, a student on our team may not have an 'F' in any class and must have at least a 2.0 GPA. During the build season we do grade checks; if a student is struggling in a class we offer tutoring and study tables after school. We partner with each other by offering a safe place to learn and offer help with homework assignments.

2.2 Recruiting New Members

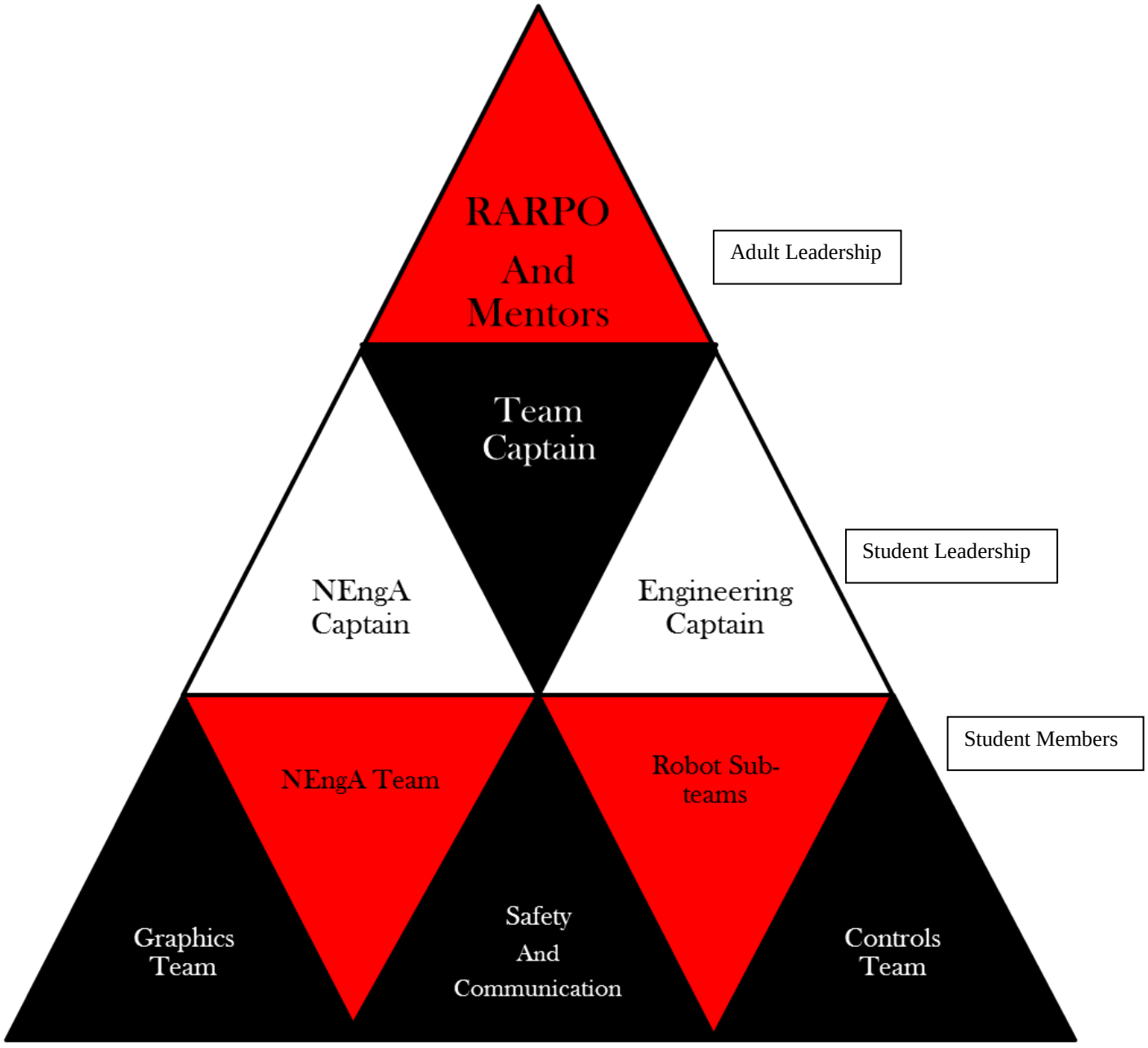
FIRST® Team 1741, Red Alert Robotics, has a number of different ways to recruit members each year. Within this past year we have hosted several open houses where we invited the whole community to come and see what *FIRST®* Red Alert Robotics is all about. In terms of recruiting directly from our school we have a call out at the beginning of the school year to encourage new students to join our team. By participating in the high school's club fair and ice cream social for freshmen at the beginning of the school year, we are able to encourage prospective students to join us at our call out meeting. At our schools "Meet the Teacher" night, we give the parents a greater understanding of who we are and flyers for our upcoming outreach events and call out meetings. Our team also has a close relationship with our FLL teams. Not only are our students mentors and coaches for our eight FLL teams, but they join us at C.A.G.E Match, an off season competition, which demonstrates what it is to be on a FRC team. At the end of the school year, we invite our FLL eighth graders to join our FTC teams and participate throughout the summer. We have two FTC teams combining eighth and ninth graders to fill the learning gap between FLL and FRC. By working alongside our FTC teams, we encourage the students to remain inspired by FIRST® while also illustrating the skills needed to be on a FRC team. This past year our FRC team has grown from 38 students to 58 students, 18 of which are females compared to the 9 that participated in the 2013 season.

2.3 Active Students

Name	Years in FIRST®	Name	Years in FIRST®	Name	Years in FIRST®
Bentson, Ellie	1	**Leser, Ryan**	3	**Scifres, Colin**	3
Blanford, Bailey	1	**Leser, Travis**	3	**Shr, Katie**	1
Broom, Ryan	1	**Martz, Joey**	2	**Smith, Mariah**	6
Butcher, Brandi	1	**McKnight, Dustin**	3	**Staats, Michael**	1
Cardwell, Nathan	5	**Miller, Andy**	5	**Stehle, Monique**	1
Chen, Jiawei	1	**Miller, Jesse**	3	**Stevens, Nick**	1
Crider, Noah	2	**Mock, Chris**	1	**Tam, Amy**	4
Culbertson, Megan	1	**Montgomery, Logan**	3	**Tam, Michael**	1
Culver, Grace	1	**Morrow, Sarah**	1	**Terrell, Grayson**	1
Davis, Cameron	2	**Newport, Max**	2	**Thielmeyer, Aaron**	1
Eid, Torben	4	**Ogle, Cooper**	1	**Todd, Cameron**	2
Gardner, Ka'oe	3	**Osborne, Connor**	5	**Tugan, Noah**	4
Hamaker, Tyler	2	**Ramirez, Tommy**	5	**Turner, Amber**	2
Hien, Maddie	1	**Rasche, Sarah**	2	**Turner, Emily**	1
James, Alex	1	**Ray, Tyler**	3	**Varney, Ashley**	1
Johnson, Christian	2	**Reeves, Marie**	1	**Vaught, Caleb**	4
Kekre, Juhi	2	**Reeves, Sean**	2	**Watson, Stephen**	2
King, Caleb	1	**Roeder, Ben**	4	**Ziegler, Nathaniel**	3
Kobierski, Jessica	5	**Rose, Hailey**	3		
Kogut, Adam	5	**Schmoll, Andrew**	4		

2.4 Management Plan

2.4.1 Team Structure Diagram



2.4.2 Expectation of Members

- When someone asks a student to do something, they will perform the task to the best of their ability. If the student feels a request is out of order, the student may talk to their captain about it.
- If a student sees someone not following safety rules, tell that person in a positive manner what they are doing wrong.
- Do everything to the best of their abilities
- Respect all members
- Demonstrate a willingness to learn new things
- Teach and mentor younger/new students

2.4.3 Expectations of Mentors

- Demonstrate the highest level of integrity
- Listen
- Demonstrate exemplary conflict management skills

2.4.4 Expectations of Student Leaders

2.4.4.1 Team Captain

- Oversee and manage the team's year round program
- Oversee all outreach and team events
- Responsible for the team year-long calendar of events
- Act as a liaison between the Red Alert Robotics Parent Organization and the team members
- Be a mentor and example to all other students
- Act as a 3rd party during a disagreement /difficult experience
- Make general decisions concerning the team
- Represent the team at all events
- Facilitate team discussions
- Lead weekly captains meetings
- Lead weekly team meetings
- If absent, communicate with assistant to make certain leadership is present at all meetings and team events.

2.4.4.2 Engineering Captain

- Oversee and manage the building of the competition robot
- Oversee all off season engineering/build projects

- Act as a liaison between the team captain and the engineering sub-teams
- Be a mentor and example to all other students
- Act as a 3rd party during a disagreement /difficult experience
- Make general decisions concerning the engineering sub-teams
- Represent the team at all events
- Facilitate engineering team discussions
- Track weight and cost of the robot.
- Attend weekly leadership meetings
- If absent, communicate with assistant to make certain leadership is present at all meetings and team events.

2.4.4.3 NEngA (Non-Engineers who are Awesome) Captain

- Oversee and manage the non-engineering sub-teams
- Oversee all team outreach and events
- Act as a liaison between the team captain and the non-engineering sub-teams
- Be a mentor and example to all other students
- Act as a 3rd party during a disagreement /difficult experience
- Make general decisions concerning the non-engineering sub-teams
- Represent the team at all events
- Facilitate non-engineering team discussions
- Attend weekly leadership meetings
- If absent, communicate with assistant to make certain leadership is present at all meetings and team events.

2.4.4.4 Safety Captain

- Oversee and manage the safety sub-team
- Ensure safe practices are followed in the shop and all events
- Oversee the safety animation submission
- Design/maintain the robot cart
- Design/maintain the pit layout
- Track any injuries on the team
- Maintain the FIRST Aid Kits
- Attend weekly leadership meetings
- Be a mentor and example to all other students

- If absent, communicate with assistant to make certain leadership is present at all meetings and team events.

2.4.4.5 Digital Media Captain

- Communicate with the overall team captain about all progress and problems
- Oversee and manage the communications sub-team
- Send out weekly team newsletter
- Manage team social media accounts
- Maintain the team website
- Attend weekly leadership meetings
- Be a mentor and example to all other students
- If absent, communicate with assistant to make certain leadership is present at all meetings and team events.

2.4.4.6 Scouting Captain

- Communicate with the overall team captain about all progress and problems
- Oversee and manage the scouting sub-team
- Attend weekly leadership meetings
- If absent, communicate with assistant to make certain leadership is present at all meetings and team events.
- Be a mentor and example to all other students
- Create an app each year in which we can use to gather information about other teams
- Communicate with the Drive team Coach throughout every competition about any information that was gathered

2.4.4.7 Sub-team Captains

- Communicate with the engineering captain about all progress and problems
- Communicate with the digital media captain about all progress
- Lead their respective sub-team
- Oversee activities for which the sub-team is responsible
- Act as a liaison between the team captains and their sub-team
- Be a mentor and example to all other students
- Act as a 3rd party during a disagreement /difficult experience

- Make general decisions concerning their sub-team
- Attend weekly leadership meetings
- If absent, communicate with assistant to make certain leadership is present at all meetings and team events.

2.5 Resources

2.5.1 School

FIRST® Team 1741 is sustained with a developed partnership with our school. We help the school in any way we can since they are a major resource to us. Throughout the years, FIRST® Team 1741 has struggled with having room to work on our robot and store all of our tools. The school has assisted us by giving us a room all to ourselves and allowing us to use the wood shop, machine lab, design room, and CAD lab. In the past, they have donated several computers to our team and for competitions they allow us to use school buses. They have given us funding and allowed us to have both a refrigerator and microwave in our room to help us during the long build season days.

2.5.2 Mentors

Our continued success is sustained primarily through our mentors. All of our mentors are community volunteers, except for two. Our mentors are always there to encourage and empower us. They put in countless hours to push us to pursue excellence. Our dedication stems from the commitment they show us. Some of our mentors are people who came in for a day and were so inspired they stayed on the team for years, even without having students on the team or a previous affiliation with *FIRST®*.

2.5.2.1 Active Mentors

Name	Years in FIRST®	Name	Years in FIRST®
Baxter, Dwight	10	**Miller, Jordan**	8
Baxter, Sharon	10	**Osborne, Chris**	2
Butts, Matt	6	**Robins, Paige**	1
Cardwell, Jon	3	**Roeder, Scott**	4
Coulombe, Nathan	5	**Rose, Christopher**	5
Crider, David	2	**Rose, Ron**	3
Eid, Brad	4	**Schmoll, Bob**	1
Frampton, Patrick	10	**Setter, Andrew**	6
Hamilton, Bob	4	**Settles, Tim**	9
Ikegwuonu, Valentine	3	**Snodgrass, Mark**	9
Meyer, Hugh	9	**Thielmeyer, Rich**	5

2.5.3 Alumni

100% of our students graduate from high school and go on to college or the military. 53% of our graduated students stayed involved with *FIRST®* as mentors or volunteers; 18% of them are currently involved with *FIRST®*. We try to keep in touch with our alumni using modern technology. Most alumni are a part of the Red Alert Alumni Facebook Page. They continue through college while keeping a close relationship with their past team mates.

A * by their name indicates they stayed involved with *FIRST®* after graduation.

A ** by their name indicates they are currently involved with *FIRST®*.

2006

- Nathan Dubbs - IUPUI
- *Cory Foster - Purdue
- *Kurt Mauer - Engineering at Purdue

2007

- Emily Baumgartner - Navy Electrical Engineer
- David Doane - Video Game Design in Manchester England
- **Patrick Frampton - Computer Science at IUPUI
- Autumn Holman - Law at IUPUI
- Scott Pace - Electrical Engineering at Purdue
- **Betsy Smith - Kindergarten teacher

2008

- *Eric Andrews - Media Arts and Science at IUPUI
- **Charlie Baxter – The Med Institute
- *Aaron Clay - Computer Science at Purdue
- Devin Dressler - Farming Technician at Ivy Tech
- *Michael Foley - Graphic Design at IUPUI
- James Kramer - Management Information Systems at Washington State University
- *Mike McCoy -Mechanical Engineering at Purdue

2009

- *James Dugan - Working at Allison Transmission and Engineering at Ivy Tech

2010

- Andrew Alderson - Computer Science at IUPUI
- *Colin Ballast - Computer Science at IUPUI
- Tim Barnett - Music at Ball State
- *David Foley - Mechanical Engineering at IUPUI
- Kelsey Hart - Civil Engineering at Purdue
- Jeremiah Hansen - Mechanical Engineering at IUPUI
- Zack Hansen - Mechanical Engineering at IUPUI
- Ben Hyatte - Environmental Science at IUPUI
- Jacob Hyatte - Chemistry at Purdue
- *Alyssa Inman - Management at Purdue
- *Mike Kobierski – Mechanical Engineering at Purdue
- Ryan Martin –EMT
- *Matt Misner - Informatics and Security at IUPUI
- Colton Sprague – Independent video game tester
- Trevor Settles - Physics at Purdue
- *Levi Miller - Electrical Engineering at Purdue
- *Craig Roberts - Electrical Engineering Technology at IUPUI
- *Zach Stanley - Electrical Engineering at Purdue

2011

- Robin Eid - Electrical Engineering at IUPUI
- Alyx Kopie - Painting at IUPUI
- **Jordan Miller - Animation and Video Game Design at IUPUI
- *Carly Morris - Entomology at Purdue
- Cynthia Rose - Engineering at Purdue
- **Nick Roeder - Engineering at Purdue
- *Austin Settles - Biology at Purdue
- Justin Sluka - Computer Science at Purdue

2012

- **Rachel Daniel - Technology Education at Indiana State
- **Steven Himebrook – Architecture at Ball State
- Rushi Patel – Electrical Engineering at Purdue
- Alden Ray – Electrical Engineering at Purdue

2013

- Darius Choksy – Physics at University of Chicago
- **Rick Clark – Chemical Engineering at Rose-Hulman

- **Josh Raker – Computer Information Systems at IUPUI
- Ethan Kring – Computer Information Systems at Ball State

2.6 Our Partnership with Our Community

- *FIRST®* Community Tech Night: Free technology education, online safety and in-home safety.
- Indy South FLL Tournament: Organized, ran, and judged the Indy South Regional Qualifying Tournament
- FLL, FRC, and FTC team mentoring: Helped establish and sustain local Jr. FLL, FLL, FRC, and FTC teams
- Operation Christmas Child: Packed over 1300 shoe boxes for children all over the world
- Girl Scouts of America Partnership: Fundraising and Gold award
- Vision Walk: We volunteered with setup and cleanup.
- Homecoming: Designed and built a float that represents school's theme and *FIRST®*
- Conner Prairie- Mini Maker's Faire: Demonstrated our robot and taught people about *FIRST®*
- Project Linus: Craft blankets for children in need
- Scouting at *FIRST®* Competitions: Working collaboratively with *FIRST®* community members to scout at regionals
- Science Fair: An experience for pre-*FIRST®* aged children to learn about science and technology at local events
- C.A.G.E. Match, Indy South Regional, Community Tech Night
- Kids Against Hunger: Helped with cleaning, stuffed and mail envelopes
- Girls Engineering Awesome Robots (GEARs): Girl Scout Gold Award, promoting *FIRST®* throughout elementary schools by giving girls 3rd through 5th grade a taste of robotics
- Chick-fil-A: Demonstrated our robot and taught people about *FIRST®* and participated in a fundraiser
- Library Demos: Promoted literacy and technology through interactions with children, to inspire them (includes use of a robot)
- Zoey's Pizza: Talked about FIRST and Red Alert
- Camp Ability: Inspired disabled children in STEAM
- Monical's Pizza: Promoted STEAM and FIRST
- IT girls club and App club: a middle school club that encourages students to pursue STEAM

- NSK: Partnered with FIRST team 3180 to participate in a corporate event.
- Adopted a Military camp: We send letters of appreciation and care packages to the Military camp in Afghanistan.
- Pop tab donation: Donated 6 pounds of recycled pop tabs to a young girl in honor of her brother.
- Camp Atterbury: Toured the military camp and told them about FIRST
- Riley's Ronald McDonald House: Promoted STEAM through team interactions.

2.7 Analysis and Strategy

2.7.1 WWW/WNI Review

This activity was performed in early October by the students in reflection on the 2013 Build and Competition seasons.

What Went Well	What Needs Improvement	What We Have Improved (2014)
Our team is becoming better known in our community.	Organization and communication throughout the team and sub teams	Leadership Skills
More efficient	Spirit for team and others	Organization and communication throughout the team and sub teams
Qualified to go to World Championship by winning an award.	Training new people	Training new people
Listened to Judges and input from other people	Check that ideas are realistic	Check that ideas are realistic
Business Plan, Dean's List, and Chairman's	Be more prepared for pre-competition scrimmages	Keeping things clean
We are role models	Accountability and consistency	Have a better sense of game and robot design strategy
Innovation with the robot	Enforce Rules	Enforce Rules
Scouting was more effective	Follow schedules and meet deadlines	RARPO-Student and Parent involvement
Properly welded robot	Complete tasks before build season	Respect
Recognized by all	Decrease drama and/or deal with drama better	Decrease drama and/or deal with drama better
Many Judges present at one time in our pit area	Have a better sense of game and robot design strategy	CAD Database
Recruiting	Integration among team members and mentors	
Improvement	More school involvement	
Team work	Leadership Skills	
Team Pride	Keeping up on the game rules	
Team Documentation	CAD Database	
Made it to Semifinals at World	More Fundraising for students	
Partnerships	Robot Cart	
Finalist at Boilermaker	Keeping things clean	
Relationships with other teams	RARPO-Student and Parent involvement	
	Respect	
	Pit Crowd Control	

2.7.2 SWOT Analysis

The SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis was performed with students in October of 2013. In this analysis, students perform a review of issues internal to the team.

Strengths	Weaknesses	Opportunities	Threats
Not afraid of change	Balance between us and *FIRST®*	Personal recognition	Drama
Good at Regionals with a durable robot	Keeping to the schedule and putting team priorities first	Scholarships and Internships	Budget cuts
Outreach	Drama and working together	Bringing back experienced mentors	Self-destructive behavior
Delegation and organization	Lack of Precision	Partnerships	Lack of training, safety and understanding the student body
Business plan	Too social	Connections	Lack of money
Administration support	Pre-season training of everything	Win at World	Other teams
Great mentors	Limited to our space	Gain experience	Sabotage
Progressing in a good direction	No extra anything	Become a leader with leadership training	Disgruntled students
FIRST® web site	Lack of participation	Networking	Lack of rules
Creativity	Communication	Relationships	Injuries
Team advocates	Document entire build process	Learning experiences	Loss of students
Established team	Repeating Mistakes	Large Freshman class	Loss of parents
Good sponsors	Clean up	Learn about other fields	Loss of workspace
Awesome parents	Realistic goals	Starting over	Loss of computer access
Motivated students	Staying committed	Win a Regional with robot	Loss of machine work
Public Speaking	Grades/academics	Speaking to NASA	Loss of mentors
Wide array of talents	Public appearance	Start FTC Team	Loss of sponsors
Great CAD	Accountability	Strong Bonds with FLL teams	Lack of respect
Documentation	Organization	Relationships with other FRC Teams	Not enough incoming students
Assistant Captains		Outreach events	Lack of motivation
Scouting		Study Tables	Bad Weather

2.7.3 PEST Analysis

The PEST (Politics, Economics, Social Issues, and Technology) Analysis was performed with students in October of 2013. In this analysis, students perform a review of issues external to the team.

Politics	Economics	Social Issues	Technology
Legislation for *FIRST®* , Mandated funding	Non-engineering sponsors may be more recession-proof	We are not using social networking to its full potential	Scouting
PLTW Teachers	Michigan gets twice the competition for the same price	Being smart should be cool	More tools available
Other teams see us, rumors	School funding	Improve community technology	We are not using social networking to its full potential
Government Shutdown	Put tariffs on imports	Internet could be good or bad—cyber-bullying	Using simulators
Janitorial Relationship	Budget cuts & referenda adversely affecting us	Start a trend in clothing, buttons, fedoras	Transferring data is easy over the Internet
Technology grants	Fewer Sponsors	Ice cream social	New Jaguars
Tax law changes	Taxable donations may be gone soon	Cyber-bullying action plan	More data possibilities
Get to know the politicians	Need to show why *FIRST®* leads to more jobs through STEM	Teach others that robotics is awesome	Write our own OS or programming language
Get to know school and district administration	Getting funding from the state for all *FIRST®* teams in IN	MAKE IT LOUD	Write smartphone games or app, like scouting
What to Do About It	Light Bulbs	YouTube video	Uses of scouting data
Understanding how we fit into the politics system	Entry Fee goes up	TV exposure	Use of tablets and smartphones for communication
Working with other governments in US	Teachers laid off		Communication with people
Contacting possible future government member to get their support before they go into office	Parts and travel fees go up		
Getting involved with STUGO	Sponsor presentations		

3 Outcomes and Goals

3.1 How we did in 2013

3.1.1 Tournaments

Boilermaker Regional, Lafayette, Indiana, March 14-16
Crossroads Regional, Terre Haute, April 4-6
World Championship in St. Louis, April 24-27
Indiana State FIRST Championship, Indianapolis, May 18
IRI (Indiana Robotics Invitational), July 19-20
C.A.G.E Match, October 19

3.1.2 Awards and Achievements

3.1.2.1 Boilermaker Regional

- Chairman's Award
  - The most prestigious award at FIRST, it honors the team that best represents a model for other teams to emulate and best embodies the purpose and goals of FIRST
- Innovation in Controls Award sponsored by Rockwell Automation
  - Celebrates an innovative control system or application of control components – electrical, mechanical, or software – to provide unique machine functions.
- FIRST Dean's List Finalist
  - Celebrates outstanding student leaders whose passion for and effectiveness at attaining FIRST ideals is exemplary.
- Regional Finalist
  - Celebrates the Alliance that makes it to the final match of the competition.

3.1.2.2 Crossroads: Entrepreneurship Award

Recognizes a team, which has developed a comprehensive business plan in order to define, manage, and achieve team objectives. This team displays entrepreneurial enthusiasm and the vital business skills to ensure a self-sustaining program. Sponsored by Kleiner Perkins Caufield & Byers

3.1.2.3 World Championship

Our alliance of three teams advanced to the semi-finals of our field. More than 300 teams attend the World Championship where they compete on four fields named for great scientists. We played on the 'Newton' field. The winning alliances for all four fields then advance to the elimination rounds that are played on a special field named 'Einstein.' Advancing to the semi-final rounds for a field means that our team is one of the top 48 teams in the world.

3.1.2.4 IRI (Indiana Robotics Invitational)

This is an invitation-only off-season tournament we are proud to have participated in over the past 5 years. Teams from all over North America attend, including the teams that played on the Einstein field at the World Championship. We finished 28th overall.

3.1.2.5 C.A.G.E. Match

This is an off-season competition that takes place in October. We are proud to have attended since its founding year in 2008. We take advantage of this event to train new members on how a competition is run. Since it has started we have won Most Charitable Donations. This year we won 2nd place for Most Charitable Donations.

3.2 Opportunity Plan

FIRST® Team 1741 will achieve their goals by following these values:

PRIORITY	The top priority of the entire team is the development of student leaders
FOCUS	Keeping the focus of the team on learning as well as the inspiration of science, technology, and business, that will never be sacrificed for distractions such as winning
INVOLVEMENT	Striving to always involve the students and community in our projects
COMMUNITY	Teaching team members the importance of giving back to the community
MENTORING	Mentoring our middle and elementary school students as positive role models
ACHIEVEMENT	Promoting the significance of academic achievement at all times
PRIDE	Encouraging students to have pride in their school, community, and team

3.3 What we want to do this year

3.3.1 External goals

- Give an opportunity for students to join and be involved in an alternative program that recognizes the importance and significance of technology
- Be recognized amongst our community
- Help other teams get sufficient funding to be sustainable
- Provide a place on the team or skill training for students outside of the Center Grove district who do not have a place on another team
- Find a practice area for all teams in the surrounding area (for before regional competitions)

3.3.2 Internal goals

- Students do all designing and building
- Win non-engineering awards
- Win engineering awards
- Win a robotics regional
- Create an environment where each student can find their strengths and are encouraged to excel
- Encourage students to have pride in their school, community, and team
- Inspire students to appreciate both sides of the team and establish equality
- Be better recognized by outside parties and perceived to be just as important as athletics
- Improve our relationship with Project Lead the Way

3.4 If we succeed in these goals

3.4.1 We will change our community by:

- Bringing our community together in the same way our athletic teams are a unifying force. We need to start in our school by making ourselves well-known.
- Giving our community an idea of what their future generation looks like by showing them what we are capable of
- Showing our community how impressive our high school is by showing them how smart, capable, and diverse our students are
- Becoming a symbol that the community can look up to
- Bringing needed technology skills to the community

3.4.2 To do this we must:

- Advertise our activities in the school and community by our tournaments being televised on-line

- Become viral through social media such as our website and our Facebook page
- Wear our team t-shirts to school
- Make team presentations to more potential sponsors and teachers

3.5 SHORT TERM PLANS

3.5.1 IN ONE YEAR

- Start an FLL or Jr. FLL team in every local elementary school
- Strengthen relationship between students and mentors
- Increase communication with school, local newspapers and TV stations
- Female engineering mentor
- Have a practice robot field for local teams
- Change “Community Tech Night” into a more attractive event
- Have more technology based outreach
- Reach out to more corporate sponsors
- Keep grades up during build season

3.5.2 IN THREE YEARS

- Organize and run one Jr. FLL event at a local school
- Create enough funds to carry over into the next year
- Increase attendance during off season
- Make a yearly science carnival at local events
- Establish one sustainable local High School *FIRST®* FRC team
- Establish a robot camp at two local elementary schools
- Girl equality on engineering side
- Have our own functional building

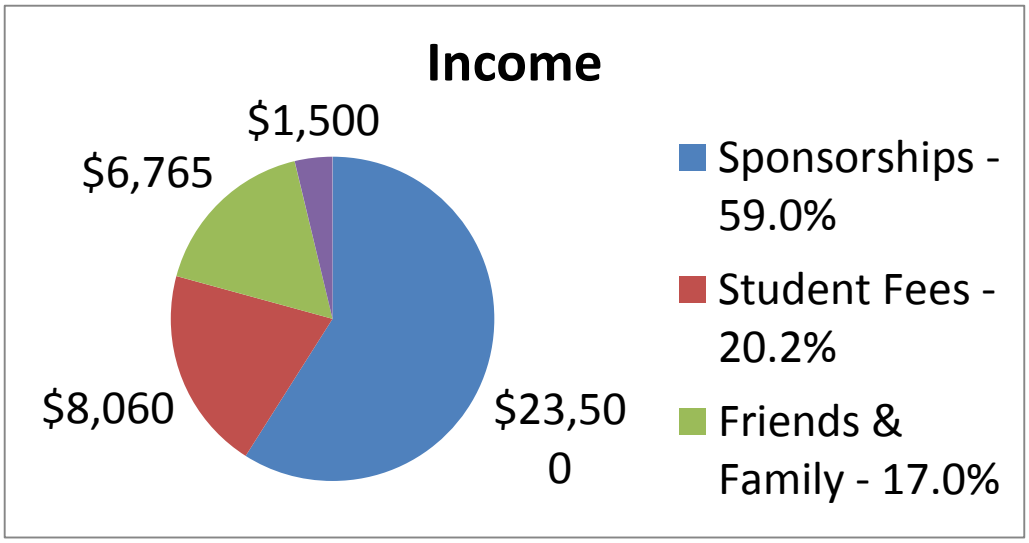
3.5.3 IN FIVE YEARS

- Establish an effective system of recruiting new members during the summer months
- *FIRST®* robotics class as a part of High School Curriculum

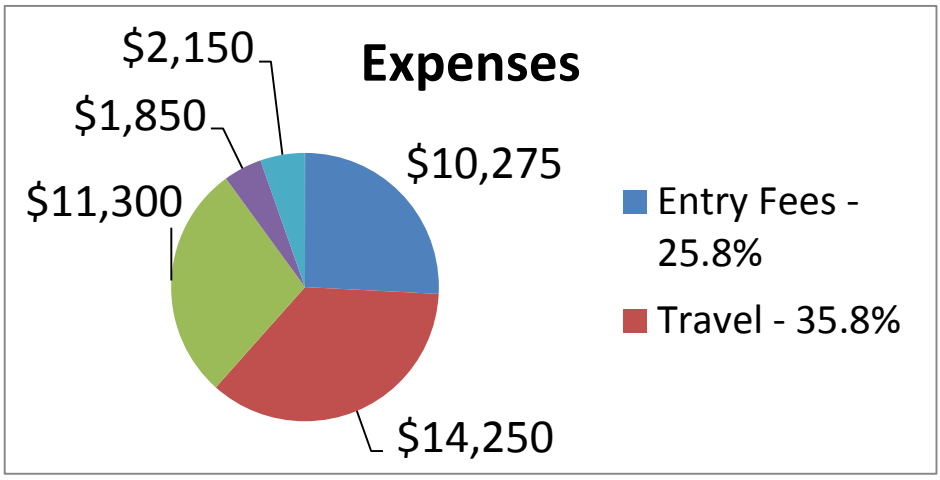
4 FINANCES

In the past, the treasurer of RARPO has been solely responsible for drafting our budget. To improve sustainability and a student lead team, we, as student captains, participate in official budget meetings that include the student body and the treasurer to create each year's budget. In order to meet our goals in the future, this year the Assistant Overall Team Captain now has the job of financial adviser and liaison between the team, mentors, and RARPO.

4.1 2012-2013 PROJECTED INCOME = $39,825



4.2 2012-2013 PROJECT EXPENSES = $39,825



4.3 2012-2013 FINANCE DETAIL

4.3.1 TOTAL INCOME = $39,825

4.3.1.1 SPONSORSHIPS INCLUDE

- Rolls-Royce
- Endress+Hauser
- Stadium Graphics
- Center Grove Education Foundation
- Tech Point Youth Foundation
- Praxair
- Southside Pediatrics
- Anonymous Sponsor

4.3.1.2 STUDENT FEES= $400 per student, with financial aid to those unable to pay

4.3.1.3 FRIENDS & FAMILY INCLUDES DONATIONS TO THE TEAM ON BEHALF OF INDIVIDUAL STUDENTS

4.3.1.4 FUNDRAISING

- *FIRST®* Light Bulbs
- Kroger Cards
- Concessions from Indy South FLL Tournament

4.3.2 TOTAL EXPENSES = $39,825

4.3.2.1 ENTRY FEES

- Boilermaker Regional at Purdue University, West Lafayette, IN
- Crossroads Regional at Rose-Hulman University, Terre Haute, IN
- IRI at Lawrence North High School, Indianapolis, IN
- CAGE Match at Southport High School, Indianapolis, IN

4.3.2.2 TRAVEL

- Hotels at Purdue, Rose-Hulman, and St Louis
- Bus rental
- Gasoline for buses
- Team meals

4.3.2.3 Banquet

- Food
- Mentor/sponsor awards
- Student awards
- Decorations

4.3.2.4 Non-engineering

- Spirit wear
- Office supplies
- Button supplies
- Homecoming float

4.3.2.5 Trailer

- Registration
- Signage

4.4 2012-2013 Detailed Finances

4.4.1 Income

Item	Amount	Description
Sponsors		
Rolls Royce	$5,000	A yearly sponsorship from Rolls Royce
Anonymous Sponsor	$5,000	
Tech Point Youth Foundation	$2,500	Yearly grant from the Indiana Department of Workforce Development to be applied towards 1 competition.
Praxair	$2,500	
Center Grove Education Foundation	$1,000	
Southside Pediatrics	$1,000	
Indiana Reality Pros, LLC	$500	
Ron Gardner	$500	
Endress and Hauser	$5000*	
Fundraising		
Donations and Student Contributions	$16,600	Through "Friends and Family Letters", we receive donations from community individuals, local businesses, and from people in eleven states.
Other Fundraising	$1,500	Kroger cards and *FIRST®* Light bulbs

Total Income= $41,100

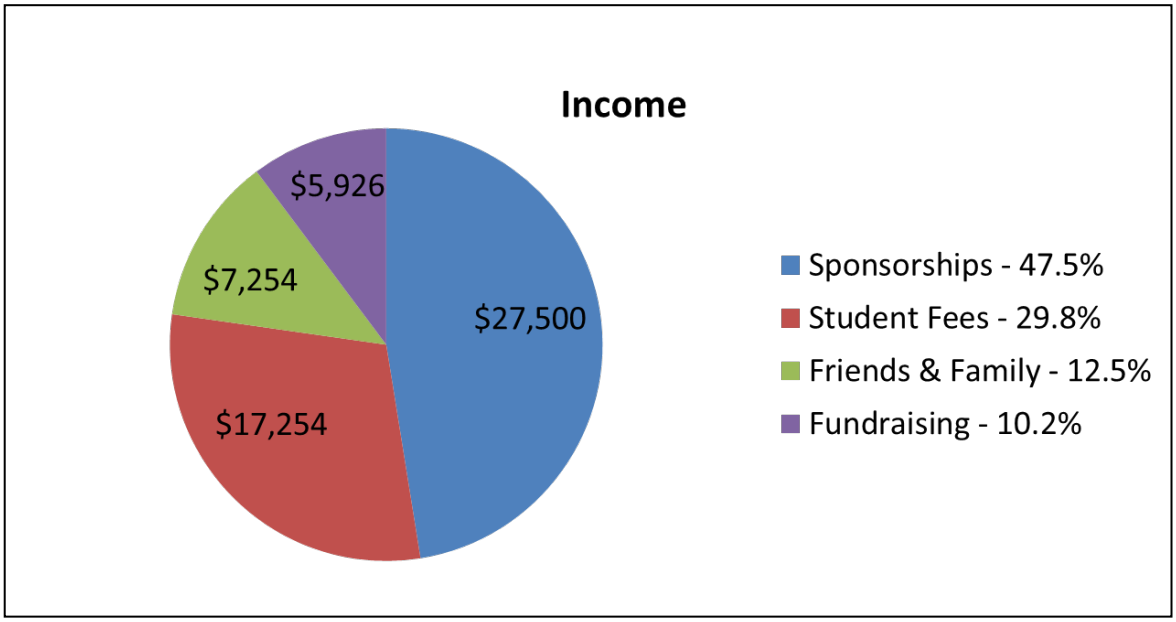
4.4.2 Expenses

Item	Amount	Description
IRI Registration Fee	$700	Entrance Fee Required for IRI
CAGE Match Registration Fee	$275	Entrance Fee Required for CAGE Match
Boilermaker Regional Fee	$5,000	FIRST® Registration Fee for the Boilermaker Regional
Team Travel Expenses: Boilermaker Regional	$2,400	Commuting to the Boilermaker Regional
Crossroads Regional Fee	$4,000	FIRST® Registration Fee for the Crossroads Regional
Team Travel Expenses: Crossroads Regional	$2,600	Transportation, meal costs, and hotels for the Crossroads Regional
Competition Robot Expenses	$7,000	Cost of construction of the competition robot and spare parts.
Prototype Robot Expenses	$3,500	Cost of construction of the prototype robot
Publicity Costs	$1,750	Covers Banner, buttons, t-shirts, spirit wear, and the website.
Community Outreach	$400	Cost of running FLL Competition, Library Demonstrations, and other outreach activities.
Miscellaneous Yearly Costs	$2,000	Cost of awards, shop upkeep

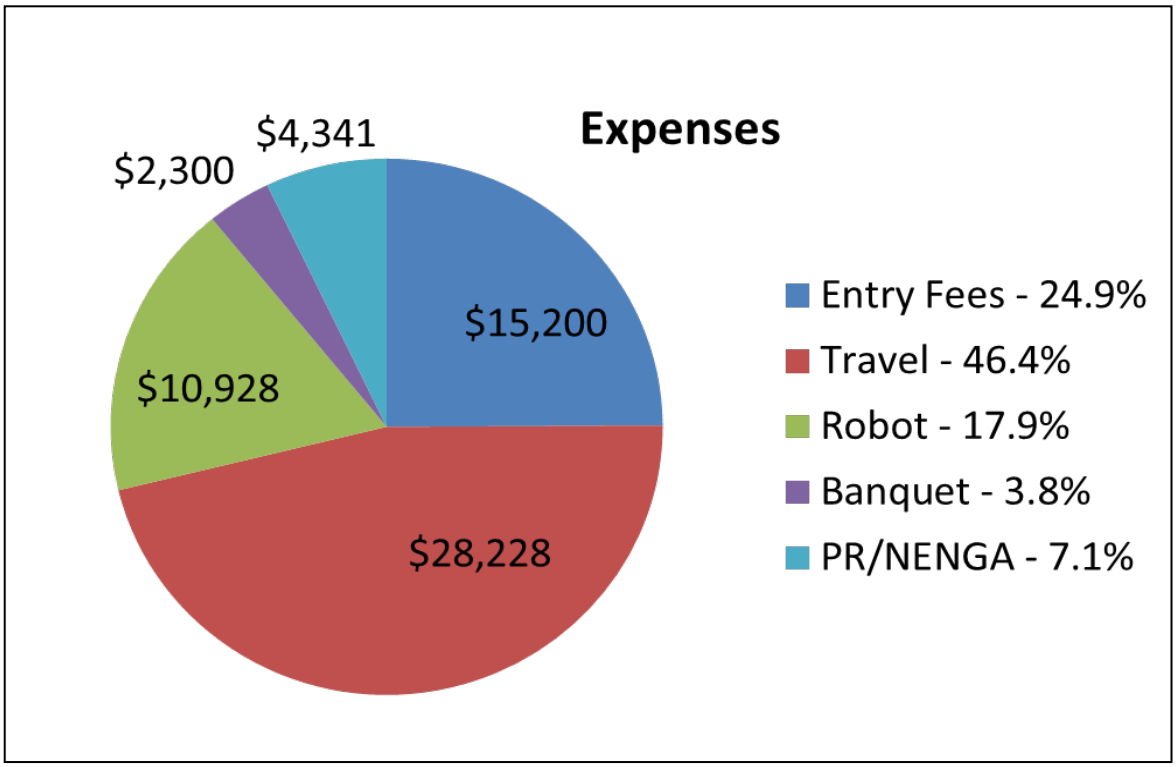
TOTAL EXPENSES= $29,625

Any surplus funds are put into the team savings account to be applied to the following year. If a shortfall should happen in funds, mentors and/or students may be asked to pay for their own meals, travel fees, and/or room fees.

4.1 2013-2014 Projected Income = $57,934.00



4.2 2013-2014 Project Expenses = $60,987.00



4.3 2013-2014 finance Detail

4.3.3 total income = $57,934.00

4.3.3.2 Sponsorships include

- Rolls-Royce
- Endress+Hauser
- Southside Pediatrics
- Center Grove Education Foundation
- Cook Medical
- National Defense Education Program
- Indiana Realty Pros, LLC
- Dr. Michael Reeves, D.D.S
- Transformation Trust

4.3.3.3 student fees= $400 PER STUDENT, WITH FINANCIAL AID TO THOSE UNABLE TO PAY

4.3.3.4 Friends & Family includes donations to the team on behalf of individual students

4.3.3.5 Fundraising

- *FIRST®* Light Bulbs
- Candy Bars
- Center Grove Fair
- Concessions from Indy South FLL Tournament

4.3.4 total expenses = $60,987.00

4.3.4.2 Entry fees

- Boilermaker Regional at Purdue University, West Lafayette, IN
- Chesapeake Regional at the University of Maryland, College Park, MD
- IRI at Lawrence North High School, Indianapolis, IN
- CAGE Match at Southport High School, Indianapolis, IN

4.3.4.3 Travel

- Hotels at Purdue, University of Maryland, and St Louis
- Bus rental
- Gasoline for buses

- Team meals

4.3.4.4 Banquet

- Food
- Mentor/sponsor awards
- Student awards
- Decorations

4.3.4.5 Non-engineering

- Spirit wear
- Office supplies
- Homecoming float

4.3.4.6 Trailer

- Registration

4.8 2012-2013 Detailed Finances

4.8.1 Income

Item	Amount
Sponsors	
Rolls Royce	$8,000
Endress and Hauser	$5,000
Transformation Trust	$5,000
Center Grove Education Foundation	$2,500
National Defense Education Program	$2,000
Cook Medical	$2,000
Southside Pediatrics	$1,000
Indiana Reality Pros, LLC	$1,000
Dr. Michael Reeves D.D.S	$1,000
Fundraising	
Other Donations and Student Contributions	$24,508
FIRST® Light Bulbs	$1,369
Center Grove Fair	$2,759
Candy Bar Sales	$1,342
Other	$456

TOTAL INCOME= $57,934

4.8.2 Expenses

Item	Amount
IRI Registration Fee	$750
CAGE Match Registration Fee	$250
Indiana State Championship Fee	$200
Boilermaker Regional Entry Fee	$5,000
Chesapeake Regional Entry Fee:	$4,000
World Championship Entry Fee	$5,000
Travel to Boilermaker Regional	$5,164
Travel to Chesapeake Regional	$12,195
Travel to World Championship	$10,529
Miscellaneous travel	$340
Robot Parts	$9,400
Shop Permanent	$700
Shop Consumable	$500
Game Field	$328
Team Banquet	$2,300
Public relations/Outreach	$4,341

TOTAL EXPENSES= $60,987

Any surplus funds are put into the team savings account to be applied to the following year. If a shortfall should happen in funds, mentors and/or students may be asked to pay for their own meals, travel fees, and/or room fees.

5 EXECUTION UPDATE

5.1 EXECUTION OF THE 2014 BUILD SEASON

See Build Season Gantt chart at Appendix B

5.2 TEAM SUSTAINABILITY

5.2.1 SUSTAINABILITY

FIRST® Team 1741 works to maintain *FIRST®*'s presence in our community. We organize events open to the public to encourage knowledge of science and technology. In addition we are working with our school system to give younger students the opportunity to join *FIRST®* earlier. This acts as a funnel encouraging them to participate in *FIRST®* throughout their school career and leads them into our team. We have a new permanent teacher coach that has strengthened our sustainability for years to come.

5.2.2 IMPORTANCE OF SUSTAINABILITY

FIRST® Team 1741 knows that sustainability is what makes *FIRST®* such a success. *FIRST®* is about innovation, inspiration, teamwork, Gracious Professionalism®, Coopertition®, and passion; we believe these are the essential roots of sustainability. These roots help to fuel our drive and dedication in the *FIRST®* program. With our sustainability, we strive to plant a seed of *FIRST®* in the hearts of every individual we come in contact with and to nurture the growth of *FIRST®.*

5.2.3 SUSTAINABILITY WITH *FIRST®*

FIRST® Team 1741 believes the best way to create sustainability is to help facilitate younger teams. Within the past few years, we have started new teams for younger students and tried to foster a love and interest in science and technology. We have done this through Jr. FLL teams, FLL teams, FTC team, and our GEARs program. Since we reach these children at a young age we hope to instill in them a love of *FIRST®* so that they continue to participate in it through high school. As of this year we have two Jr. FLL teams, eight FLL teams, and two FTC teams. In case we lose a major sponsor, we have created a list of fundraisers we could do. We are working on building up our school support to make sure we always have sponsors and the ability to travel.

We have built a strong partnership with many local teams in addition to *FIRST®* Team 3180. Every year we deliver a care package to Team 3180 and 4926. For the last few years, we have supported Team 1529 in setting up their local off season competition C.A.G.E. Match. Last year we shared a bus with a rookie team, 4545, to the World Championship in order to enable them to participate. We also strive to assist other teams,

to the best of our ability, to enable their Chairman's, scouting, robot, and Business Plan to be successful.

FIRST® Team 1741 is interested in expanding all levels of *FIRST®*. We have started two FTC teams of 8th and 9th graders to work alongside our team. The 9th graders are a part of both teams allowing them to increase their knowledge of *FIRST®* and spreading Gracious Professionalism®. We are proud to say that we have started and facilitated many FLL teams over the past several years. *FIRST®* Team 1741 hosts the Indy South Tournament - the only official FLL event in central Indiana and the only event sponsored and run by an FRC team. Over the past three years, we partnered with two elementary schools in our district to form our two *FIRST®* Jr. FLL teams, one that is entirely females.

We have a 100% high school graduation rate and 100% attend college or join the military. 18% of our graduates currently continue on in *FIRST®* as mentors or volunteers. These statistics show what an impact *FIRST®* has had on the lives of our students.

5.2.4 Sustainability within our Community

FIRST® Team 1741 partners with our community. We host and participate in events that positively impact our community while allowing our students to step up as leaders and engage in high-level planning. Our build room was a stop for The Amazing Race, where couples built their communication skills while trying to hang a LogoMotion tube. To catch the attention of young children at our events, we hold mini-science fairs that encourage creativity and science/technology. We section off areas dedicated to young children and include student-created lesson plans such as "Fun with Physics." We hold our science fairs at various public events across our state. Red Alert also participates in Project Linus where our team parents, students, and our school's other clubs come together to craft blankets for children in need.

We have created several partnerships within our community. Strange Brew, a local coffee shop, allowed us to create a coffee blend, Robot Rampage, which they sell. The funds we receive from Robot Rampage go towards sustaining our two FTC teams. Not Just Popcorn, a local gourmet popcorn shop, created popcorn named Red Alert Velvet and allow us to sell the Red Alert Velvet as a fundraiser for our team. These partnerships enable us to spread the name of the businesses while promoting FIRST® and sustaining our team.

One of our most successful events each year is our *FIRST®* Community Tech Night. We focus on creating better cyber-citizens and increasing digital literacy within our community. In previous years, we have offered 32 different classes including internet safety, video game safety, anti-cyber bullying—that included a visit from the Greenwood

Chief of Police— E-mail, Microsoft Word, and classes for technology used within the school corporation. Most classes are taught by *FIRST®* Team 1741 students and district middle school teachers. Classes offered for young children included "Silly Science" and "Marble Coaster eXtreme" classes. With this event we reach people of all ages and spread the knowledge of STEM and FIRST® throughout our community.

To sustain our team we participated in the Community Fair located at a local mechanics shop. At this event we demonstrated our robot along with other aspects of our team. We were able to spread the name of FIRST and Red Alert throughout our community. We also spread our name and love of STEAM by visiting Riley's children hospital. At this event we showed the children how technology is used outside of their hospital room. Along with Riley we visited two Camp Ability sites, which is a camp for disabled children over the summer. Red Alert demonstrated our robot and conducted a silly science fair with the children.

FIRST® Team 1741 tours the state with our own traveling exhibit called, "Amazing Robots." We visit libraries doing demonstrations, and spreading the word of *FIRST®.* In conjunction with our library demonstrations we have started a literacy program called "Read Alert" where we boost literacy skills with technology-related literature.

5.2.5 Developing Sustainability within Our Team

We are determined to build a better team. We strive to do our best in all areas and aspects of *FIRST®.* Students gain transferrable skills in leadership, public speaking, business, and teamwork. We pride ourselves in the strenuous processes of high-level planning and decision-making of our team. Each student must show their commitment and willingness to make decisions for the good of the team and to work in harmony with each other. We build our strength in these fields through unforgettable memories and experiences geared towards inspiring students to pursue STEAM fields.

Before build season begins, we focus on building the skills of our students. We offer training sessions in areas including teamwork, Chairman's, scholarships, programming, electronics, scouting, CAD, leadership skills, machining, drivetrain, and safety. Before the build season begins we hold several design exercises to demonstrate the design process to our students in order to give them can an idea of what it takes to design a robot. During the design exercises, students must partner with other team members to design certain tasks such as a roller coaster, Jaguar box, a spaghetti tower, and a t-shirt canon robot. Grades are very important to our team. During the build season we monitor grades. If a student is struggling or failing, we have mandatory tutoring and studying sessions, called Study Tables. Each individual student has his/her own personalized success plan.

5.2.6 Developing Sustainability with Others

Our strongest partnership is with our mentors. Even though we are a student lead team, our mentors are always there to guide us to be the best we can be. They put in immeasurable volunteer hours in order to see us succeed. From this commitment, we learn what it is to be dedicated. Our mentors are people who continuously inspire us with science and technology and encourage us to keep going. Most of our mentors do not have a student on the team and never have had a student on the team. This shows that we have inspired them just as much as they have inspired us in the ideals *FIRST®* has created.

Without a partnership with sponsors, our team could not function. Their ability to extend their knowledge and resources keeps us running and gives us a glimpse of our future through donations, summer internships, and jobs. We try to give back to our sponsors by updating them on our success throughout the year by giving presentations and inviting them to our competitions.

To help our local and extended community we serve Kids Against Hunger, which is a non-profit organization that desires to feed the hungry. We stuffed letters and cleaned some of their equipment after a packing event. Red Alert wants to have a lasting impact on our whole community and by volunteering at Kids Against Hunger we are able to achieve this goal.

During the Christmas season our team partners with a worldwide organization to help pack care packages. We helped pack 1300+ boxes to be shipped across the world. *FIRST®* Team 1741 also partnered with a local Girl Scout troop for fundraising. We helped another Girl Scout create GEARs, a mini robotics and science club, for her Gold Award. GEARs reaches out to girls in grades 3rd through 5th inspiring them to become involved with science and technology and feed them into our FLL teams.

5.2.7 Sustainability with our School

FIRST® Team 1741 has developed sustainability within our school through partnerships. Our partnerships with our Football Team and our Ultimate Frisbee team categorize as sustainable due to their commitment to help us with necessary assistance. Our team is the only school extra-curricular activity to build a float for the homecoming parade, and we are hoping to continue that throughout the years to come.

Our team is strongly involved in other areas of the school curriculum as well, which will hopefully be carried out in the future. Many of our students are involved in our school's Project Lead the Way Classes.

6 AWARDS

2013

Entrepreneurship Award - Crossroads Regional
FIRST® Dean's List Finalist – Boilermaker Regional
Regional Finalist – Boilermaker Regional
Regional Chairman's Award – Boilermaker Regional
Innovation in Controls Award – Boilermaker Regional

2012

Entrepreneurship Award—Boilermaker Regional
Engineering Inspiration Award—Queen City Regional

2011

Regional Chairman's Award – Boilermaker Regional
Entrepreneurship Award – Boilermaker Regional
Most Charitable Donations - CAGE Match

2010

FIRST® Dean's List Finalist – Boilermaker Regional
Gracious Professionalism Award sponsored by Johnson and Johnson
Regional Finalist – North Carolina Regional
Most Charitable Donations - CAGE Match
Humanitarian Award - MARC

2009

Most Charitable Donations - CAGE Match

2008

Motorola Quality Award – Boilermaker Regional
Xerox Creativity Award – St. Louis Regional
CAGE Match Finalist
Most Charitable Donations - Cage Match

2006

Rookie Inspiration Award – Boilermaker Regional
Regional Finalist –Boilermaker Regional

7 Risk Management Plan

7.1 Risk Matrix

6.2 Possible Risks

7.2.1 In case of Loss of School Build Area

The effect this would have on our team:

- We may have to move off of our school property. We have arranged a worst-case-scenario with parents who own barns. They may offer this as an option to us, should this happen.
- If barns or similar facilities are not available, the team may need to rent a space to use.
- We currently have four rooms allotted for our use and should we move off-site, this space could be reduced and we would no longer have use of the school's equipment (i.e. lathe, mill, band saw, et al.)

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- The Engineering side of the team may need to meet separately from the NEngA side of the team in order to save space.
- We would need to reassess our budget to allow for purchasing of rental space or needed resources such as tools.
- Market our team to other facilities, for example, Local Central 9 Career Center, in hopes of seeking alternative permanent meeting space; also continue contact with Center Grove in hopes of earning our meeting space back.

7.2.2 IN CASE WE LOSE KEY SPONSORS

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- With fewer sponsor dollars to use, our team has had to adjust our budget. We would likely continue to spend less in all areas such as build cost, promotions, and outreach funding.
- If severe enough, the team may need to increase the cost of team membership to students, likely having them pay more to participate in the team, pay to travel, or pay their own hotel expenses.
- Mentors may also see a cost increase, possibly having to pay their own travel and hotel arrangements.
- As a team we may need to find alternate hotel arrangements. As a team, we stayed in West Lafayette Jr/Sr. High School, home of *FIRST®* Team 461, for the Boilermaker Regional.
- As a team we may need to find alternate travel arrangements. As a team, we traveled to the Smoky Mountain Regional on a bus with *FIRST®* Team 1747.
- If funds run low enough, we may attend fewer competitions, or possibly only one.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- The team would need to do more fundraising and begin it earlier – not starting at the start of the school year, but possibly at the end of the previous year's competition season.
- Our team would need to market ourselves to attract new sponsors and to work towards a greater relationship with current sponsors.
- Start a team "Emergency Fund" which contains exactly enough money for a build expenses and one competition expense for the following year.

7.1.1 In Case Our Parent Organization Embezzles Our Funding

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- First we would need to alert the proper authorities that this issue had arisen.
- The resulting loss of funds would have a similar effect as the Loss of Key Sponsors.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- Our team would need to create new bank accounts for all of our funds.
- Anyone who has access to *FIRST®* Team 1741's funding would need to be bonded and ensured to handle our money.
- We would work to generate new funds through fundraising and finding new sponsors.
- We would work harder to apply for grants to fill in the missing funding.

7.1.2 In Case Our Team Loses Access to School Computers

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- Students would have to bring in their own personal computers to complete team work, work at home, or use the few laptops that the team owns.
- Students would no longer have access to the four years' worth of team data the team has saved for use.
- Students could possibly lose access to the Robotics Team networked hard-drive which is accessible from all school computers.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- The team would need to pay for and install needed programs on team laptops and possibly personal laptops for team use.
- The team may need to budget for additional laptops for the future, depending on the need.
- We may need to find alternative hosting for the Robotics Team networked drive and possibly the team website

7.1.3 In Case We Lose Our School Liaison

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- With the support of our school's administration, the team can sustain without a school liaison as long as we work to inform this administrator, i.e. a Vice Principal such as Mr. Betts, of our team's activities.

- With the loss of this liaison, we would lose access to needed student information such as grades, attendance, and even locker numbers
- Without a school liaison it is often difficult to arrange for team traveling and team events within the school.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- The school approves a mentor to be the sponsor and grants that mentor a key to access the building.
- The team would appoint a mentor to accept team mail.
- The team would work to document activities with the school.
- The team must work to recruit a new liaison.

7.1.4 IN CASE OF SNOW AND/OR ICE STORM

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- Every day the school is closed, we are not permitted to meet. This shortens the amount of time we have to design and build the robot during build season.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- We have a schedule tailored for each build season that maps out deadlines. Within this schedule, we have extra days implemented as buffers in case we should fall behind due to unsafe weather.
- If we should run out of buffer days, we will arrange several various strategies to continue progress.
    - If school is cancelled early on into Build Season, during the brainstorming and design process, the Engineering captain and sub-team captains shall arrange to communicate and continue progress through the technology available to us.
    - If school is cancelled during the later stages of Build Season, the Engineering captain and sub-team captains shall arrange to meet at an off-site work site to continue progress.
    - If school is cancelled, the NEngA captain will arrange communication with their team and continue progress through the technology available to us.

7.1.5 In Case of an Epidemic

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- Because we work together daily and still attend school, there are many possible times where a team member could come into contact with the flu or another virus and can distribute the virus throughout the team before becoming sick themselves. This could cause many students among our team to fall sick during the crucial points in build season.
- Without the majority of our students, we would fall behind schedule and could possibly not finish by bag day.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- If it should spread enough to affect the schedule, we would use our buffer days to catch up and/or increase the meeting times to make up the lack of workforce.
- We encourage our students to wash their hands frequently during the Flu season and practice the proper coughing technique. Also, if they are feeling unwell the student may choose to stay home as to not spread the virus. If an epidemic should break out among our team we would send home students that were affected and try to conduct business as usual.

7.1.6 In Case of Tornado

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- In the past, the damage caused by tornados that would affect our team is road damage or blockage. The road blockage would be cleared within a day or two allowing us to continue to meet.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- Our team practices tornado drills in case we were in the building when one struck.
- If a tornado would create road blockage or damage, we would find alternative routes to the school and if that was not possible then rearrange the schedule and use a buffer day. If we were out of buffer days then we would increase the length of team meetings to make up for lost time.

7.1.7 In Case of Flood

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- In the event of a flood in our facility, not only would we not be able to enter the building, there would be a chance of damage to our team documents, machines, tools, and computers.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- In case of damage, there are certain items of ours that are insured by the school. We would fundraise to replace anything else.

7.1.8 IN CASE OF STUDENT LEADERSHIP INCAPACITATION

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- There would be little to no impact on our team in case this should happen. We have set up our team with a leadership system where each captain has a sub-captain that can take over in case of emergency.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- We have an aforementioned system of captains so our team is always prepared for this situation.

7.1.9 IN CASE OF SEVERE INJURY

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- Depending on the severity of the injury, the school district could take away machines and even our team.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- In case equipment is taken from us, we would work with private companies to machine our parts.
- In case the school discontinues our team, we would relocate the team.

7.1.10 IN CASE OF LOSS OF KEY MENTOR(S)

THE EFFECT THIS WOULD HAVE ON OUR TEAM:

- Each mentor has certain roles they perform, without those tasks being accomplished, our team would fall behind.
- If we were to lose our teacher sponsor, our team would not have a connection to our school.

HOW WE WOULD HANDLE THIS, SHOULD IT ARISE:

- The captains will have to identify the mentor's roles and divide them amongst themselves.
- We would have to work with the administration on finding a new connection to the school.