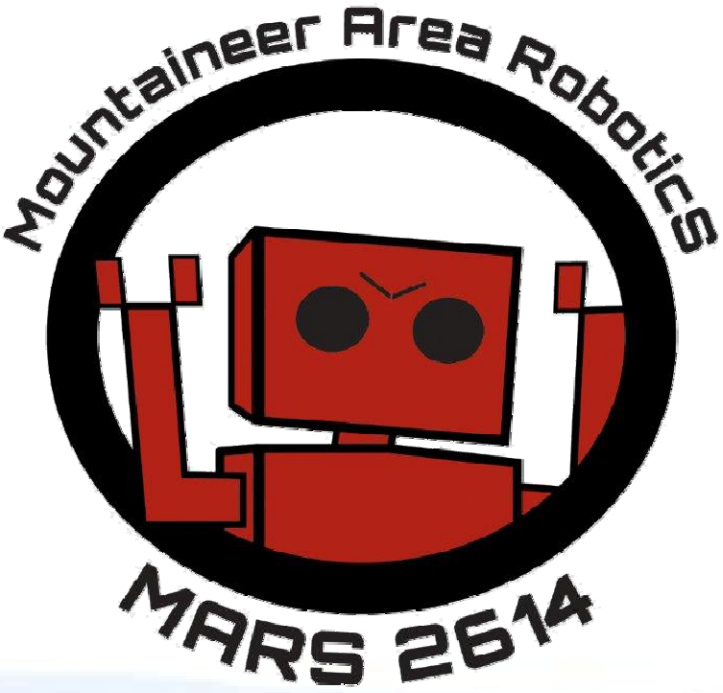


FIRST Team 2614 Mountaineer Area RoboticS 2012-2013 Business Plan

We came to be inspired.

We stay because we are.

We will become the inspiration.

Table of Contents

1. Executive Summary

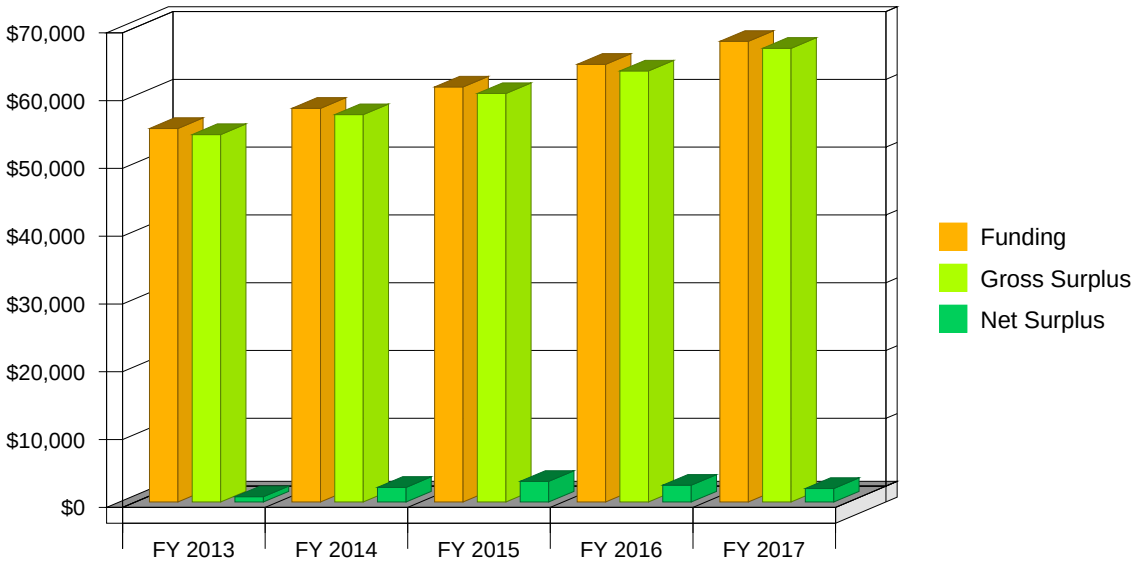
Mountaineer Area RoboticS (MARS), FIRST® Team 2614, was founded in 2008 by five student members of a former three-time West Virginia (WV) state champion FIRST LEGO® League (FLL) team to continue the appreciation of "Science, Technology, Engineering, and Mathematics (STEM)" education after moving on to their high school career. MARS competes in robotics competitions under the umbrella organization called For Inspiration and Recognition of Science and Technology(FIRST). FIRST was founded in 1989 to inspire young people's interest and participation in science and technology. Based in Manchester, NH, FIRST designs accessible, innovative programs that motivate young people to pursue education and career opportunities in STEM fields, while building self-confidence, knowledge, and life skills.

FIRST sponsors competitions among students in a variety of divisions depending upon their age or grade. MARS competes in the FIRST Robotics Competition (FRC) division, which contains students from grades 9 - 12 and between the ages of 14 - 18. However, MARS also sponsors and mentors teams in the FIRST LEGO League (FLL) division. This division serves students from grades 4 - 8 and between the ages of 9 - 14. Recently, MARS has begun sponsoring and mentoring teams in the Jr. FLL division which runs from grades K-3 and ages 6-9.

The MARS program currently encompasses youth from all over north-central West Virginia who dedicate themselves to a rapidly expanding, statewide robotics network. Through partnerships with 4-H, NASA, the local school system, West Virginia University, and numerous corporate sponsors, MARS is contributing engaging educational opportunities and service to those in their state-wide community. In its six years of operation, MARS has been extremely successful, winning a variety of awards and earning a berth at the FIRST World FRC competition 4 out of 5 years. MARS has high hopes that they will once again gain the opportunity to compete at the World competition this season.

Using the field of robotics as a platform, the primary purpose of MARS is to develop and promote increased participation in post-secondary education in WV high school students. MARS feels the attainment of this mission is important because currently the number of WV high school students seeking ANY kind of post-secondary education (college, trade school, junior college etc.) is 16%. This is less than half the U.S. national average of 33%. The team is extremely proud that 100% of MARS graduates have gone on to pursue college careers on a full or partial scholarship. This document outlines in detail the history of MARS, its mission and objectives, and their strategy and plans to achieve their goals.

Highlights



1.1. Objectives

Year One Goals

- Develop FLL robotics workshops for state 4-H camps.
- Expand number of teams participating in the annual FLL scrimmage.
- Add at least one platinum level sponsor or two silver or gold-level sponsors.
- Increase the percentage of participation of graduating FLL students into a high school FIRST program.
- Increase participation among young women in the STEM fields.
- Partner with NASA to host the WV State FLL Tournament in Fairmont.
- Procure a full-field practice facility.
- Design and build a LEGO model of the Global Precipitation Measurements satellite for NASA.

Year Two Goals

- Help establish at least one new FRC or FTC team in WV.
- Increase statewide awareness of FIRST activities in WV in general, especially in state, and private, primary, secondary, and post-secondary educational institutions.
- Maintain a student to mentor ratio of 1:1.
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Add 5 new FLL teams with the collaboration with 4-H and NASA.
- Add at least one platinum level sponsor or two silver or gold-level sponsors.
- Increase media coverage for FLL scrimmage.
- Increase participation among young women in the STEM fields.
- Identify opportunities to reach more local high school students.
- Identify opportunities to expand job-skill training for team members.
- Establish a scholarship application program for WV FRC graduates for post-secondary education.

Year Three Goals

- FLL programs will be available in 30 WV counties.
- Increase statewide awareness of FIRST activities in WV in general, especially in state and private, primary, secondary, and post-secondary educational institutions.
- Increase fundraising by 5%.
- Add at least one platinum level sponsor and two silver or gold-level sponsors.
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Maintain a student to mentor ration of 1:1
- Partner with sponsors to maintain current internships and develop additional internship opportunities.
- Increase participation in the scholarship application program for WV FRC graduates for post-secondary education by 50% over previous year.
- Increase the number of scholarships awarded to WV FRC graduates through the program by 50% over previous year.

Year Four Goals

- FLL Programs will be available in 35 counties.
- Increase statewide awareness of FIRST activities in WV in general, especially in state and private, primary, secondary, and post-secondary educational institutions.
- Increase fundraising by 5%.
- Add at least one platinum level sponsor and two silver or gold-level sponsors.
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Maintain a student to mentor ration of 1:1.
- Partner with sponsors to maintain current internships and develop additional internship opportunities.
- Increase participation in the scholarship application program for WV FRC graduates for post-secondary education by 50% over previous year.
- Increase the number of scholarships awarded to WV FRC graduates through the program by 50% over previous year.

Year Five Goals

- FLL programs will be available in 40 WV counties.
- Increase statewide awareness of FIRST activities in WV in general, especially in state and private, primary, secondary, and post-secondary educational institutions.
- FIRST graduates in WV will have a 95% post-secondary education attendance rate.
- Government officials will participate in annual FLL Scrimmage.
- Maintain at least fifty-percent of graduating FLL students going into a high school FIRST program.
- Maintain a student to mentor ratio of 1:1.
- Establish more than one new FRC or FTC team.
- Increase fundraising by 5%.
- Add at least one platinum level sponsor, and two silver or gold-level sponsors.
- Increase participation in the scholarship application program for WV FRC graduates for post-secondary education by 50% over previous year.
- Increase the number of scholarships awarded to WV FRC graduates through the program by 30% over the previous year.

1.2. Mission

Vision Statement

MARS is an organization comprised of high school students, mentors and parents in North-Central WV that provides a purpose-driven creative outlet through FIRST competitions, sponsorship and support of FLL teams, and the promotion of post-secondary education through community outreach and the support of our partners.

Governing Values

The following are the values that form the culture and fabric of MARS. They expect all the members and mentors to display these values at all times as role models of both FIRST and MARS.

- **"Squared Away"** - This is the team's primary governing value. Being "squared away" simply means that all the members (students and mentors alike) are expected to be in the right place, at the right time, with the right equipment, and the right attitude for the activity in question.
- **Knowledge** - All the team's members are expected to be both knowledgeable and familiar with all aspects of the MARS organization and its operations. The team's members can speak with equal clarity about fundraising, community outreach, the business plan, and all other aspects of the team's operations.
- **Excellence** - No matter what the given task, the team's members will complete it on time with a superior level of quality and workmanship. Everything the team produces is of showpiece quality and contributes to their ability to sponsor and mentor other FIRST and FLL teams, and aids them in their community outreach.
- **Self-actualization** - The members can not only be counted on to stay on task when supervision is absent, they can be relied upon to recognize work that needs to be done, and complete it on their own initiative.
- **Bold** - Where self-confidence meets enthusiasm, you get that quality of innovation to explore new avenues, take risks, think outside the box and develop new solutions that have not been tried before.
- **Hard-working** - This is the ability to stay on task until the task is complete.
- **Driven** - To be compelled by an unstoppable inner force to succeed and become the absolute best that one can possibly become.
- **Dedication/Commitment** - The willingness to pledge their time, their skills, and their labor to MARS, win or lose, in both the easy times, as well as, the hard times.
- **Gracious Professionalism** ® - (a registered trademark of *FIRST*),A term coined by Dr. Woodie Flowers FIRST National Advisor and Pappalardo Professor Emeritus of Mechanical Engineering, MIT. Gracious Professionalism is a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community. It is the belief of both the members and mentors of MARS that this is a vital skill that today's workforce would do well to see more of.
- **Coopertition** ® - (a registered trademark of FIRST), Coopertition is the concept and philosophy that members of any organization can and should help and cooperate with each other even as they compete so that all may benefit. Coopertition means competing always, but assisting and enabling others when you can.

Mission Statement

Using the field of robotics as a platform, it is the mission of MARS to develop and promote increased participation in post-secondary education in WV high school students. We do this through community outreach and development of technical programs designed to instill superior practical life skills, including:

- Gracious Professionalism
- Teamwork
- Leadership
- Coopertition

We also develop in each of our student members exceptional personal productivity skills such as:

- a strong work ethic,
- superior dedication and commitment to team and community,
- and highly developed organizational skills.

In the end, the mission of MARS can be summed up as giving all West Virginia students the skills and opportunities needed to develop in themselves their best future possible.

1.3. Keys to Success

Given the MARS mission to develop and promote the increased participation in post-secondary educations in WV high school students. The team believes the following to be the keys to success in their efforts to help give all West Virginia students the skills and opportunities needed to develop in themselves their best possible future.

- Increasing the awareness of FIRST throughout the state in general but more especially, among primary, secondary, and post-secondary institutions, vocational institutions, and local businesses.
- Maintaining adequate funding.
- Helping to develop FLL and Jr. FLL teams throughout the state.
- Being successful in FRC competitions.
- Helping to develop avenues for WV students to access the post-secondary educational system.

2. Organization Summary

Organization and Management

The Mountaineer Area RoboticS team (MARS) is divided into four sub-teams. They are: the mechanical team, the programming team, the Chairman's/presentation team, and the competition teams. Students on team MARS are divided into sub-teams based on their interests, skills and goals. Each sub-team is led by adult and college mentors that help guide students. Students can change sub-teams between seasons but must learn an entirely different skill set during the off season. A goal of MARS is for everyone on a sub-team to thoroughly understand their tasks and goals for the season. Each sub-team also has a student leader who helps keep the team on track during the season. Competition teams are formed at the end of the build season and play an important role at the regional competitions.

Below is a brief description of each of the sub-teams and their functions.

Mechanical Team

- ***Build Crew:*** This team does the actual assembly of the machine during the build phase. The jobs vary depending on the direction of the build mentors and the abilities of the students. Be aware that to be a part of this crew and to be trusted enough to work in the workshop, one must demonstrate utmost respect for others, common sense, safe working skills, a lot of interest, hard work and good communication skills. Many of the students on this team join the Drive team and Pit crew once competitions begin. (4-10 students)
- ***Electrical Team:*** The Electrical Team does the wiring of the robot. They connect all the components to make the robot operate. This group must communicate closely with the build and programming teams to make sure that there is no interruption of the robot's functions. They must have a good understanding of basic circuitry and robot components. (4 students)
- ***Pit Crew:*** The Pit Crew is a small group of students involved in the maintenance and creation of the robots, playing field, tools, and other accessories. During the off-season, students are expected to maintain current robots and tools. Once the competition season starts, the crew is responsible for the creation of a playing field to specific directions. At competitions, their major responsibility is the maintenance of the robot and tools. This job requires one to be punctual and present when required. It also requires one to be organized with tools and batteries. One must be willing to listen and learn from adults and work with their peers.

Programming Team

- ***Robot Programming:*** This team develops the code for the autonomous and tele-operated functions of the robot. The team learns the LabVIEW programming language (and C++) during the off-season and works on actually programming the robot during the season. This team is also involved in the development and workings of various sensors and electronics. (5 students)
- ***Computer Aided Design Team:*** The CAD Team uses Autodesk products or Solidworks to create the CAD drawings that are used to construct the robot. Team members will be expected to commit large amounts of time, especially during the beginning of build season. Members will be expected to attend additional meetings and go through software training. They must have a computer at home to work on projects. (4 students)
- ***Website Team:*** The website sub-team creates and maintains the MARS website. The team works year-round to update and improve existing content, both at team meetings and at home. Every build season, they submit the website for the Website Excellence Award, which MARS has earned multiple times. While students with previous experience in HTML code or graphic design are an asset, team members can learn the necessary skills as they work. The only requirement is the willingness to learn. (3 students)

Chairman's/Presentation Team

- ***Chairman's Team:*** The Chairman's Award is the greatest honor in the FIRST Robotics Competition. The award is given to a team that best exemplifies the ideals of FIRST. To exemplify FIRST, a team must show community involvement, demonstrate their partnership, inspire other teams, be a role model and be of service to the community of FIRST. To earn this award the team must demonstrate all aspects of their team by the creation of a Chairman's submission in the form of a written submission, oral presentation, and video. There are very specific criteria for this submission as well as a specific due date. This sub team is made up of students that are interested in documenting our team's efforts in the form of a submission. Coordination with the other sub groups is essential for the success of the project. The resulting document is a chronicle of our team's efforts. This committee demands students with skills in writing, design, advertising and presenting. You will most likely end up creating 10,000 character essay, a portfolio, a power point presentation and various public relations material. This team reports directly to the Chairman's team student mentor and adult mentors. (4 students)

- ***Communications/Public Relations Team:*** The Communications Team works to hone interviewing skills and presentations. They often speak directly to groups, judges and the media. At competitions they are stationed outside the pit area to greet other team members and present our image to the public. The team will also keep up to date on FIRST rules revisions and inform the team throughout the competition season. This team will submit press releases and articles to the local news on a regular basis. They will take and archive photos of the events of the season. (2 Students)
- ***Video Team:*** The Video team will create a video that complements the Chairman's document. Usually this three minute video is done in a creative way to support the information presented in the chairman's document and which can be used for team publicity. They also maintain a visual record of the team's activities throughout the season. The video team will also record all the activity of our robot during practices and matches. This video will be reviewed by the scouting team immediately after the matches in order to provide the drive team with detailed information. This information gathered will allow the team to analyze the performance as well as strategies used to play the game. The students on this team should have an interest in using the video camera and editing using computer software.(2 students)

Competition Teams

- ***Drive Team:*** The Drive Team consists of a driver, a co-pilot, a human player, a back coach, a backup co-pilot, and a backup driver. A competitive selection process using several robots from previous years selects the drive team. Students interested in becoming drivers should practice as much as possible to develop their skills. There is a main team and a back-up crew usually made up of rookie drivers. The drive team is required to stay with the robot a majority of the time at the competitions. They will also arrive early and stay late to practice at the competitions. This group must interact with the Scouting Team and the Pit Crew. (6 students)
- ***Scouting Team:*** The Scouting team is formed prior to the competition. Students on this team will develop materials and methods to assess the competition giving our team as much advantage as possible. The collection of data and the analysis of the information will assist our team in all phases of the competition. At the competition, this team will make presentations to the drive team on Thursday and Friday evenings.

2.1. Legal Entity

MARS is a 501(c)3 nonprofit organization, offering sponsoring organizations the ability to make tax-deductible contributions to the team. The following is a list of the board membership of Mountaineer Area RobiticS:

- **Chairman** - Dr. Earl Scime, PHD
- **Vice Chairman** - Phillip Tucker
- **Secretary/Treasurer** - Dr. Ralph Utzman, PHD
- **Board Member** - Herb Baker
- **Board Member** - Mark Lusk

Each of our Board members may be contacted through the MARSwebsite at http://www.MARSfirst.org/?page_id=767.

2.2. Organization History

MARS was founded in 2008 by five student members of a former three-time state champion FIRST LEGO League WV FLL team to continue the appreciation of STEM education after moving on to their high school career. Building on the principle of creating a state-wide robotics network that encompasses elementary, middle, and high school youth, MARS has expanded the program into every corner of the

state. Our relationships with West Virginia University, our local Board of Education, NASA, and 4-H are crucial to our success. The resources these organizations provide, such as financial assistance, facility access, shop equipment, and mentors, are invaluable to our progress. To date, the team is 38 members and 34 mentors strong, with the program rapidly expanding annually. All graduates of the team have attended college on a full or partial scholarship, and most of them are majoring in STEM fields. Many of the local businesses and corporations have offered internship opportunities for MARS youth, either during or following their high school careers.

In MARS's initial year of competition (2008), the team was awarded the Rookie All Star Award in Pittsburgh, in a field of eight teams. In addition, MARS competed in the quarter finals and the semi- finals as an alliance partner with FIRST team 337 and FIRST team 357 to win the Pittsburgh Regional. Theythen won a berth to Atlanta for the World Championship, where they enjoyed three days of intense competition with teams from around the world.

In MARS's second season (2009), they continued their success in competition. Besides making it to the semifinals at both the Pittsburgh and Palmetto Regionals, their advanced and innovative control system won the Rockwell Automation Innovation in Controls Award at both competitions. MARS also won a safety award at the Palmetto Regional. Off the field, MARS participated in many community outreach events, developed an inclusive marketing plan, and began developing a successful FLL program by starting eight and sponsoring ten FLL teams. To help other FRC teams, MARS developed an informational manual for rookie teams, Search for Rookie Team Inspiration which they translated into three languages. MARS participated as a LabView beta test team and distributed the Orbit Ball game pieces to teams in need.

In MARS's third season (2010), they created the curriculum for a variety of summer camps, sponsored eleven and mentored fourteen FLL teams in three counties, and continued to grow the MARS team! MARS sponsored FLL teams swept the WV FLL state tournament, including first place overall, first in technical, and first on the field. The MARS FRC team competed in the Pittsburgh and Raleigh Regionals where they were awarded the Rockwell Automation Innovation in Controls Award at both regionals, capping a string of four consecutive Rockwell Controls Awards. At Raleigh, MARS also won the Engineering Inspiration Award for their extensive community outreach- sending team MARS to the World Championships in Atlanta, GA. At the World Championship, MARS team member Luke Scime was named one of the 10 Dean's List Award winners, of 45,000 FRC students, for his efforts in expanding FIRST.

In MARS's fourth season (2011), their FLL program expanded dramatically and now includes teams in more than 15 counties. they started their first rookie FRC team at Winfield High School in Putnam County, WV, FIRST Team 3492, PARTS. MARS-sponsored FLL teams swept the WV FLL state tournament, including first and second place overall, first in research, and first on the field. The MARS FRC team competed in the Pittsburgh and Palmetto Regionals, captaining the 4th seeded alliance in Pittsburgh and the 2nd seeded alliance in Palmetto, and reaching the semifinals in both events. In Pittsburgh, MARS won the Entrepreneurship Award, and coach Dr. Earl Scime was named the Regional Woodie Flowers Award finalist winner. In Palmetto, they were awarded their second consecutive Engineering Inspiration Award, enabling the MARS team to attend the World Championships in St. Louis, MO. At the World Championship, MARS worked alongside their Rookie team, FIRST team 3492, who was on the winning alliance at the Pittsburgh Regional, and their FLL team, the MARS Rovers. After the completion of the regular season, the MARS team sent two robots and drive teams to compete in an off-season event, CORI (Central Ohio Robotics Initiative) alongside their Rookie Team, FIRST team 3492.

In MARS' fifth season, their FLL program spread to over 20 West Virginia counties and one Southwestern Pennsylvania county, widening the impact of their FIRST program on the state. MARS mentored FLL teams swept the WV State Tournament with first and second place overall, first, second, and third in robot design, first and second for the research project, and the core value awards for Teamwork, Gracious Professionalism, and Inspiration. The team also led many summer camp activities and worked diligently to bring FIRST to more students than ever before. At the Pittsburgh Regional, the

team won the regional and secured a spot at the World Competition. At the North Carolina Regional, MARS was a regional finalist, as well as won the Chairman's Award, the most-prestigious award on the regional level, for their extensive outreach efforts and spreading STEM education. At the World Competition in St. Louis, the team's robot was competitive in their division and the head coach, Dr. Earl Scime, won the Woodie Flower's Award, an award honoring a mentor who's dedicated their time to working with FIRST robotics programs. Dr. Scime was the first mentor in a four digit team number, as well as the first mentor in the 2,000 team numbers to win the World Woodie Flowers award. After the completion of the regular competition season, the team competed at two off season events, CORI (Central Ohio Robotics Initiative) and IRI (Indiana Robotics Invitational). At CORI, MARS placed as the runner up alliance, while at IRI, they placed 17th.

In 2012-2013, MARS continued their outreach throughout the summer and fall, creating curriculum for many area youth summer camps, and expanding their FLL Program to 54 teams in 22 West Virginia Counties and one Southwestern Pennsylvania County, in addition to taking over the State Tournament. Projects such as these reinforce the valuable tenets of STEM education.

SUMMARY OF MARS AWARDS HISTORY

2008

Pittsburgh Regional

Rookie All Star Award

Regional Champions

World Championships

2009

Pittsburgh Regional

Rockwell Automation Innovation in Controls Award

Website Excellence Award

Palmetto Regional

Rockwell Automation Innovation in Controls Award

Industrial Safety Award (runner up)

2010

Pittsburgh Regional

Rockwell Automation Innovations in Controls Award

Dean's List Finalist - Luke Scime

North Carolina Regional

Rockwell Automation Innovation in Controls Award

Engineering Inspiration Award

World Championships

World's Dean's List- Luke Scime

2011

Pittsburgh Regional

Entrepreneurship Award

Woodie Flowers Finalist Award - Dr. Earl Scime

Palmetto Regional

Engineering Inspiration Award

World Championship

2012

Pittsburgh Regional

Rockwell Automation Innovation in Controls Award

Regional Champions

North Carolina Regional

Regional Chairman's Award

World Championship

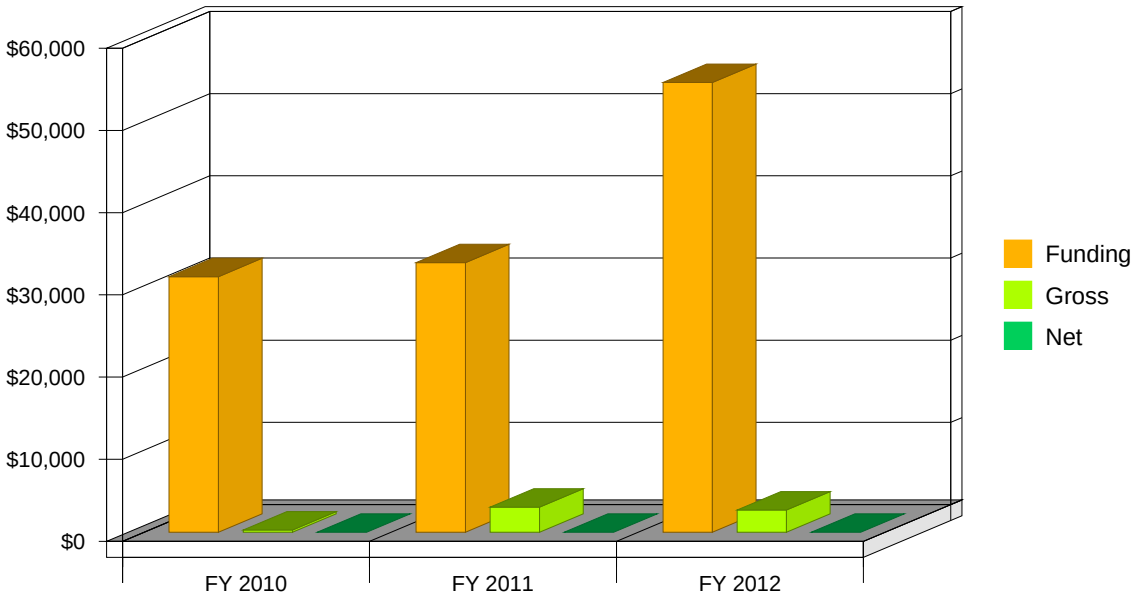
Woodie Flowers Award- Dr. Earl Scime

Indiana Robotics Invitational (IRI)

Finished 17thout of 70 elite Teams

Past Performance			
	FY 2010	FY 2011	FY 2012
Funding	$31,097	$32,803	$54,718
Gross Surplus	$265	$3,056	$2,707
Gross Surplus %	0.85%	9.32%	4.95%
Operating Expenses	$30,832	$29,748	$52,011
Balance Sheet			
	FY 2010	FY 2011	FY 2012
Current Assets			
Cash	$600	$5,147	$2,707
Other Current Assets	$0	$0	$0
Total Current Assets	$600	$5,147	$2,707
Long-term Assets			
Long-term Assets	$0	$0	$0
Accumulated Depreciation	$0	$0	$0
Total Long-term Assets	$0	$0	$0
Total Assets	$600	$5,147	$2,707
Current Liabilities			
Current Borrowing	$0	$0	$0
Other Current Liabilities (interest free)	$0	$0	$0
Total Current Liabilities	$0	$0	$0
Long-term Liabilities	$0	$0	$0
Total Liabilities	$0	$0	$0
Paid-in Capital	$0	$0	$0
Retained Earnings	$600	$5,147	$2,707
Earnings	$0	$0	$0
Total Capital	$600	$5,147	$2,707
Total Capital and Liabilities	$600	$5,147	$2,707

Past Performance



3. Services

The services and products provided by MARS all complement the main mission of the organization, which is to develop and promote increased participation in post-secondary education in WV high school students. The standards of quality of the services and merchandise presented will be based on creativity, imagination, and technical innovation culminating in a unique experience unavailable in any other primary and secondary educational venues.

Services

The primary service the team provides is to individual team members. All MARS team members are high school aged students. MARS provides each of its members with basic to advanced training in: business, mechanical and electrical engineering, computer aided drafting and design, electronics and wiring, welding, carpentry, computer programming, time management, journalism, public relations, web site development, leadership training and teamwork. Providing these services to the team is a gifted cohort of mentors who are experienced professionals in their field at a ratio of mentors to students that is 1:1. Competing in FIRST competitions gives our members the opportunity to pull all these skills together in to one cohesive "product" of the robot and its documentation that allows them to assess their advancement comparatively to other similar programs around the country. The graduating seniors leave the program with a skill set that gives them a basic understanding of how business organizations operate, and gives them a leg up on understanding the applicability of what they learn during their post-secondary educational careers.

Secondary services are provided directly by the team members. Through our MARS outreach programs, students seek to develop an interest in science and technology at an early age though our sponsorship and development of FLL teams at the elementary and middle school levels throughout the state. Many of these middle school students continue in the FIRST program by joining their local FRC teams once they enter high school. Finally, to ensure that these middle school have an FRC team to join, MARS is active in the sponsorship and development of high school FRC team throughout the state.

Additionally, MARS's community outreach program provides a variety of services all designed to help bring more educational opportunities the rural and economically disadvantaged areas of West Virginia. Below is an overview of many of the teams activities over the last five years. Many of these activities have become annual events.

Services Overview

- **Statewide FIRST Robotics Program**
  - 56 FLL teams in 5 WV Counties and 1 PA County
  - 1 FIRST Robotics Competition (FRC) Team - Started and Mentored
- **Organizes and hosts annual FLL Scrimmage**
  - Admission is food for Food Drive Supporting Local Food Pantries
- **Develop and teach curriculum for summer camps (4-H, Boy Scouts, National Youth Science Camp, etc.)**
  - JASON Project- specific curriculum for college credit
- **Mascot robot participates in local parades**
- **Mascot robot walks dogs at local animal shelter charity events**
- **Mascot robot performed ribbon-cutting for construction projects on the WVU campus:**
  - White Hall renovation (Department of Physics)
  - Basketball practice facility
- **Members participate in read-aloud at the local children's hospital and library with a storybook written and illustrated by members of the team**
- **Designed and built LEGO scale model of NASA satellite for use in classrooms**
  - The satellite model was used as a prop on the TV show *The Big Bang Theory*
- **Members participate in triathlons and walkathons benefitting the American Cancer Society and Habitat for Humanity**
- **Team provides robotics demonstrations at various community events:**
  - October Sky Festival
  - Summer Camps
  - Teaming to Win conference
  - Youth Groups
  - Open House

Products

As a fundraising activity MARS offers two products for sale. The team's primary product is FIRST Green e-watt saver LED light bulbs. These technologically advanced light bulbs are provided by the FIRST organization as a fundraising product. A superior light bulb to standard incandescent bulbs, these LED bulbs provide a brightness of 450 lumens (40 watt equivalent) and have an estimated lifespan of 22.8 years. In addition they use only 8.5 watts of energy compared to a standard 40 watt bulb, and an estimated annual energy cost of only $1.02. MARS offers these bulbs through the team's website and at local events, providing a green alternative to standard bulbs that will more than pay for themselves through both the bulb's longevity and energy savings over its lifespan.

MARS's second fundraising products are custom LEGO models of NASA's Magnetospheric Multiscale Satellite (MMS) spacecraft and NASA's Global Precipitation Measurement (GPM) space probe. Developed under a grant from NASA, and with the collaboration of with the NASA IV and V center in Fairmont, West Virginia, the LEGO MMS model was designed and built by student members of MARS. This model will be used by teachers around the country to teach students about NASA programs, and was recently featured on the popular TV show The Big Bang Theory. This show has a weekly audience of 17.6 million viewers. This

model is available for purchase through the website at:www.marsfirst.org/?page_id=3432. In 2012, MARS was again contacted by NASA to develop- a new LEGO model of NASA's space probe. Similar to the MMS project, this model is currently under development and will be available for teachers by NASA and through the MARS website in the near future.

4. Market Analysis Summary

To achieve the team's mission the team has divided their target market into the following five segments:

1. WV high school students.
2. WV Students currently at the elementary and middle school levels.
3. Grant writing foundations and corporate sponsors.
4. Local Morgantown residents and internet purchases of "Green" products.
5. Fans of LEGO products and NASA (primarily schools, other FIRST teams)

4.1. Market Segmentation

As can be seen in the market analysis table and the associated market analysis pie chart, the current projections for the target market segments:

WV High School Students - The National Center for Education Statistics (NCES) predicted that High School Enrollment in WV would decrease by 12% between 1999 and 2011. Actual figures for the rate of decline have not yet been released, and no new projections have been made. The team used the stated projections for the most recent study. As can be seen, the projected decline in actual students is minimal through 2016. Regardless of the rate of decline in students, West Virginia has 55 counties containing 157 high schools, and until each of these high schools has access to a FIRST FRC team, MARS will still consider this segment our primary target market.

WV Elementary and Middle School Students - The situation in this market segment is similar to that of WV high schools. The NCES predicted enrollment decrease of 9% for the same time period. As above, West Virginia has 607 elementary and middle schools throughout the state and until each of the students in these schools has access to an FLL, or Jr. FLL team, MARS will still address this target market through sponsorship and support activities.

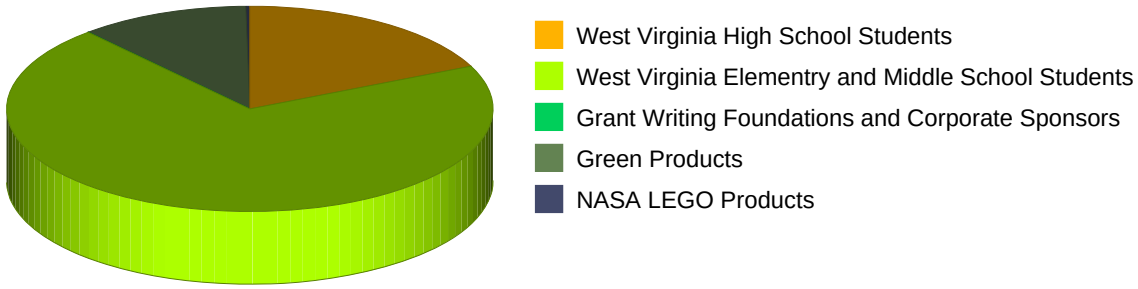
Grant Writing Foundations and Corporate Sponsors - MARS predicts that there is currently a potential of 50 possible sources of funding through each of these two avenues. They currently have only 17 sponsors which meets the current funding needs. However, the identification and acquisition of additional sources of funding will be an important key to the success of their mission over the next five years.

LED LIght Bulbs - The potential market for our LED light bulb is essentially the number of households in the greater Morgantown, WV area. As Morgantown is a stable and thriving city the actual growth rate is probably positive. However, as there is little chance that MARS will ever be able to exhaust the market at its current size, we did not project any growth in the market over the period of this plan.

LEGO MMS and GPM models - MARS predicted that the market for this product would be school systems (primarily in WV) and perhaps some members of other FRC and FLL teams and their parents. As this is a difficult number to predict with the organization's current resources, they have set the potential market at 800 units. Once again, as it would be extremely difficult for their capacity to exceed the current market potential, they once again did not predict any growth potential.

Market Analysis							
Potential Customers	Growth	2012	2013	2014	2015	2016	CAGR
West Virginia High School Students	-1%	53,842	53,304	52,771	52,243	51,721	-1.00%
West Virginia Elementary and Middle School Students	-1%	208,168	206,086	204,025	201,985	199,965	-1.00%
Grant Writing Foundations and Corporate Sponsors	10%	50	55	61	67	74	10.30%
Green Products	0%	33,446	33,446	33,446	33,446	33,446	0.00%
NASA LEGO Products	0%	800	800	800	800	800	0.00%
Total	-0.88%	296,306	293,691	291,103	288,541	286,006	-0.88%

Market Analysis (Pie)



4.2. Target Market Segment Strategy

Currently, only 16 percent of all West Virginia high school graduates seek any form of post-secondary education after graduating. This statistic is even lower for female graduates. According to the Brookings Institute, the U.S. job market has shown an ever-increasing need for high skill based, and high education based jobs over the last three decades with the greatest growth occurring within the technical and professional fields. Given this, MARS feels that if West Virginia is to remain competitive in its abilities to provide opportunities and good quality of life for its citizens over the long term, their youth must increase their participation in career training of any sort after high school. Given that the majority of job growth is occurring in technology intensive fields such as engineering and medical science and services, they feel the more high school graduates they can interest in these fields, the better the state's future will be.

As such, the primary target market of the MARS organization is West Virginia high school students, especially female students, with an interest in developing their future potential for opportunity to its highest possible degree. It is MARS's goal, to always promote and increase this segment's participation in some form of post-secondary education. Their strategy is to raise awareness of FIRST within West Virginia, through successful in competition, community outreach, and assisting in the development of new FRC teams throughout the state.

Just as important is the team's secondary market segment - students at the elementary and middle school level. MARS believes that the earlier they can promote and maintain an interest in science and technology, the better the chances are that these students will maintain that interest during their secondary educational career, and then go on to some form of post-secondary education after graduation. They have found that the field of robotics is an excellent platform to create and maintain this interest science and technology.

The third market segments are those organizations that provide funding through grants and corporate sponsorships. The strategy in approaching this market is to provide each of their sponsors with a superior organization in which our sponsors can invest their charitable contributions. Through their contributions, the team's sponsors play an important role in the successful completion of MARS's mission, which provides them not only the benefit of enhancing their own community outreach programs, but also improving West Virginia a pool of potential quality employees over time.

Sales of LED light bulbs and LEGO products are tertiary markets for the team as the development of these segments to significantly levels will draw resources away from the achievement of their primary mission. As such, the strategy in both these segments is largely internet sales with sales at local events as possible.

5. Web Plan Summary

The MARS website is divided into several main menus. They are as follows:

- Home
  This is a link back to the home page, which features our news blog, links to FIRST, links to the team's Twitter and Facebook feeds.
- FIRST
  - FIRST Challenges
  - FIRST History

This section focuses on FIRST, as it gives a brief description of what FIRST is and provides a link back to FIRST in case someone would like more information. The other two sections tell people about the competitions and the history of FIRST.

- MARS
  - MARS Team Mentors
  - MARS Team Structure
  - MARS Team Vital Statistics
  - Robot Genealogy
  - Contact Us

This section of the web site focuses on the team. It provides information about who the team's mentors are and the team's structure. In addition, MARS also provides general team statics relating the team and its accomplishments. The Robot Genealogy pages give a brief description of robots for each competition year. Our Contact Us page is there to let everyone know how to contact MARS with questions or they needs more information about MARS or FIRST.

- Resources
    - 2012 Chairman's Essay
    - How to Start a New Team
    - Resources: Tips and Tricks

The content in this section is meant to be helpful to other teams or people hoping to start a new FLL or FRC team. MARS has posted pictures of how the team's bumper covers are constructed, the Chairman's essay, Safety Video, programming code and other links to resources hoping that it will be beneficial to other teams.

- Sponsors
  This link provides information about becoming a sponsor and a thank you to our current sponsors. Sponsors logos are linked back to their web sites to help them with marketing efforts as well.
- WV Plan
    - Educational Outreach
    - Community Outreach
    - Appalachian Robotics Alliance
    - Partnerships
    - Overcoming Barriers
    - Sustainability
    - FLL Program

The WV Plan portion of the website focuses on MARS outreach activities. It highlights some of MARS activities and some of the challenges that MARS faces. It is designed to show other teams how important outreach is and what we are currently doing to help promote education in the STEM fields.

- MARS Blog
  News and events pertaining to the team or robotics are posted in the MARS blog. During competition season, MARS uses the blog to post scores of the matches for team members or families of team members who are not able to make it to competitions.
- Portfolio
  Pictures are posted here of various events MARS has participated in.
- Calendar
  Displays the calendar of events.
- "Support Our Team"
    - Light Bulbs
    - MMS Lego Model

Information is provided for others who would like to support the team. MARS has provided information here about the light bulbs the team sells and who to contact to purchase them. In addition, the team also sells MMS Lego model kits; the information for ordering those can be found under the MMS Lego Model link.

5.1. Website Marketing Strategy

The website's main function is to provide information to the general public about robotics and the importance of encouraging others to inspire children to grow and excel in the STEM fields. The website provides links to FIRST so educators and adults wishing to sponsors teams can get additional information. The site also encourages others to contact the team with questions or if their team needs mentors or assistance.

The "Sponsors" and "Support our Team" pages provide various ways for businesses, community groups, and individuals to assist the team so that they can continue to do outreach activities each year.

5.2. Development Requirements

The website is designed by the MARS website sub team. Students on this team are assisted by the help of a mentor to construct the web site. The team members learn how to convert videos for the web, create graphics, learn HTML, CSS and WordPress. Content for the site is provided by the Chairmans team and other mentors.

6. Strategy and Implementation Summary

Given the mission of using the field of robotics as a platform, it is the goal of MARS to develop and promote increased participation in post-secondary education of WV high school students. The strategy to attain this goal is to start as early as possible by sponsoring as many Jr. FLL and FLL teams as possible. MARS feels that by cultivating an interest in science and technology at a very early age, they have the best chance of maintaining that interest through high school and into college. As such, they concentrate the majority of their outreach efforts in the grades of 4 through 8 (ages 9 - 12). Recently, they have begun outreach programs at the grade levels of K through 3 (ages 6 - 9). They feel that if they can reach students at the very beginning of their career, by the time they are high school seniors, the need for skills in the fields of science and technology will be second nature and there will no question of their continuing their educations after high school.

6.1. Fundraising Strategy

SPONSORSHIP STRATEGY

MARS offers fundraising opportunities at a variety of levels to sponsors and grant providers on an annual basis. Sponsoring MARS is a great way to support STEM education in the West Virginia. 100% of all donations go towards registration fees, robot parts, materials, and student lodging during travel to competitions. All donors are recognized in a variety of ways. Below is a list of the sponsorship levels and their associated benefits:

- **PLATINUM SPONSOR** - $5,000 and up
  Listing in all Literature
  Active logo link on website
  Listing on the team T-shirt
  Sponsor name on robot
  Identification as a primary sponsor informal team name.
- **GOLD SPONSOR** - $1,000 - $4,999
  Listing in all Literature
  Active logo link on team website
  Listing on the team T-shirt
  Sponsor name on robot
- **SILVER SPONSOR** - $250 - $999
  Listing in all literature
  Logo on team website
  Listing on t-shirt
- **BRONZE SPONSOR** - $50 - $249
  Listing in all literature
  Logo on team website

2012 - 2013 SPONSORSHIP

Below is a list of sponsors for the 2012 - 2013 season.

- Badger and Sal Financial: Certified Public Accountant and Consultant
- HHP Internal Medicine
- Bakers Ridge Pet Hotel

West Virginia University

State of West Virginia

Morgantown, WV Rotary

Cheat Lake Rotary

For more information on the team's sponsors, visit the website at http://www.marsfirst.org/?page_id=104 For reference information contact MARS at (304) 293-3422 ext 1400.

6.1.1. Funding Forecast

MARS receives its funding through three primary avenues:

1. Grants
2. Sponsors and Donors
3. Fundraising

Limited additional funding comes from miscellaneous sources but these funds are not significant enough to warrant their own category, as such, they have been included in the category named "Miscellaneous."

GRANTS

Grants comprise one of the two main sources of funding for MARS. Grants come from programs and organizational foundations. For the 2012 - 2013 season, the projected funding through this avenue amounts to S11,500.00.

SPONSORSHIPS AND DONORS

Sponsorships and donations is the primary funding avenue for MARS. Without the generous support of corporate sponsors and private donors, achieving the MARS mission would be nearly impossible. For the 2012 - 2013 season, MARS projects $38,755.02 through this avenue.

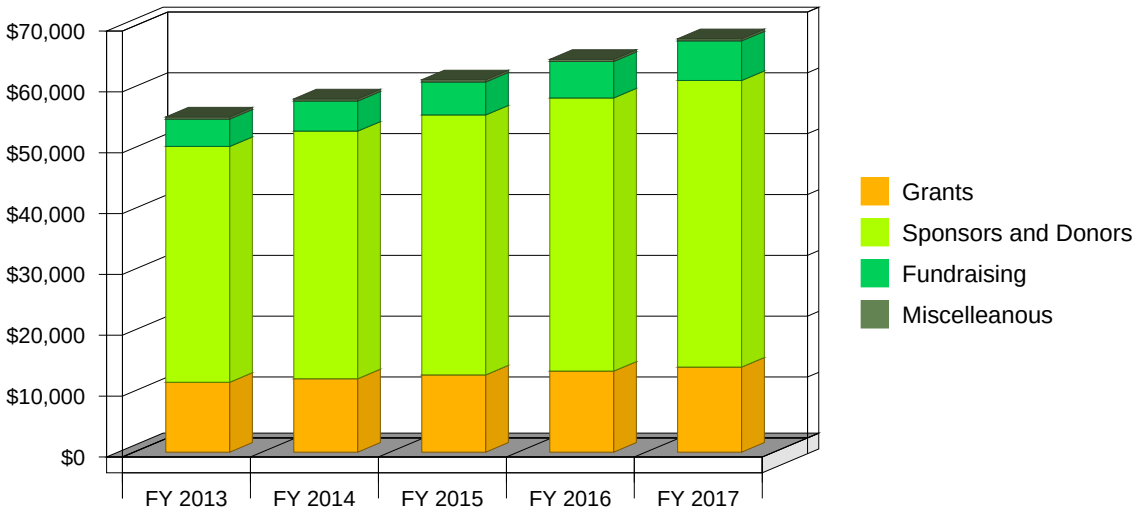
FUNDRAISING

MARS fundraising activities comprise local and internet sales of LED light bulbs, and internet sales of LEGO MMS models. In the 2013 - 2014 season, MARS will begin selling the new LEGO GPM models. For the current season (2013 - 2014), they project to generate $3,500.00 from sales of these products.

Funding Forecast

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Funding					
Grants	$11,500	$12,075	$12,700	$13,325	$14,000
Sponsors and Donors	$38,755	$40,700	$42,725	$44,900	$47,100
Fundraising	$4,500	$4,950	$5,450	$6,000	$6,500
Miscellaneous	$350	$350	$350	$350	$350
Total Funding	$55,105	$58,075	$61,225	$64,575	$67,950
Direct Cost of Funding	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Fundraising Materials	$900	$930	$960	$985	$1,025
Row 2	$0	$0	$0	$0	$0
Row 3	$0	$0	$0	$0	$0
Subtotal Cost of Funding	$900	$930	$960	$985	$1,025

Funding by Year



7. Management Summary

The management functions associated with MARS are carried out by a talented group of mentors that assist, guide and teach the students in each of the teams activities. Below is a list of mentors for the 2012 - 2013 season.

Lead Mentors

- Dr. Earl Scime, Ph.D
- Phil Tucker

Programming Team Mentors

- Don Ohi
- Steve Raque
- Elvira Stenescu, Ph.D
- Nick Ohi
- Luke Scime
- Barry Haycock
- Karna Desai
- Christian Haining
- Subra Subraanyam

Mechanical Team Mentors

- Todd Hamrick, Ph.D
- Herb Baker
- Mark Lusk

- Greg Lusk
- Ryan Utzman
- Dennis Bonnstetter
- Caroline Hamrick
- Arron Kitzmiller
- Jesse Van Glan
- Daniel Davis

Chairman's Team Mentors

- Ralph Utzman, Ph.D
- Debbie Hamrick, RN
- Shannon Ballard
- Alex Stout
- Michael DeHaan, MSILR
- Courtney Rice

Logistics Mentors

- Donna Ballard, Ph.D
- Mary Ann Fajvan, Ph.D
- Dianne Raque
- Mark Tennant
- Maureen Tennant

Drive Team Mentors

- Haley Tucker
- Scott Hamrick

Website Mentor

- Elizabeth DeHaan

Animation and CAD Mentor

- Tim Floyd

Monongalia County Schools Mentor

- Elvira Stanescu, PhD

8. Financial Plan

MARS projects a need for funding growth of 5% per annum to achieve its goals and objectives. This growth is expected to be obtained through the retention and renewal of current grants, the continued support of their current sponsors and donors, as well as, the acquisition of new grants, sponsorships, and increased fundraising. At the current time, MARS intends to continue to operate on a cash basis, and does not intend to use debt as an instrument to fund its activities.

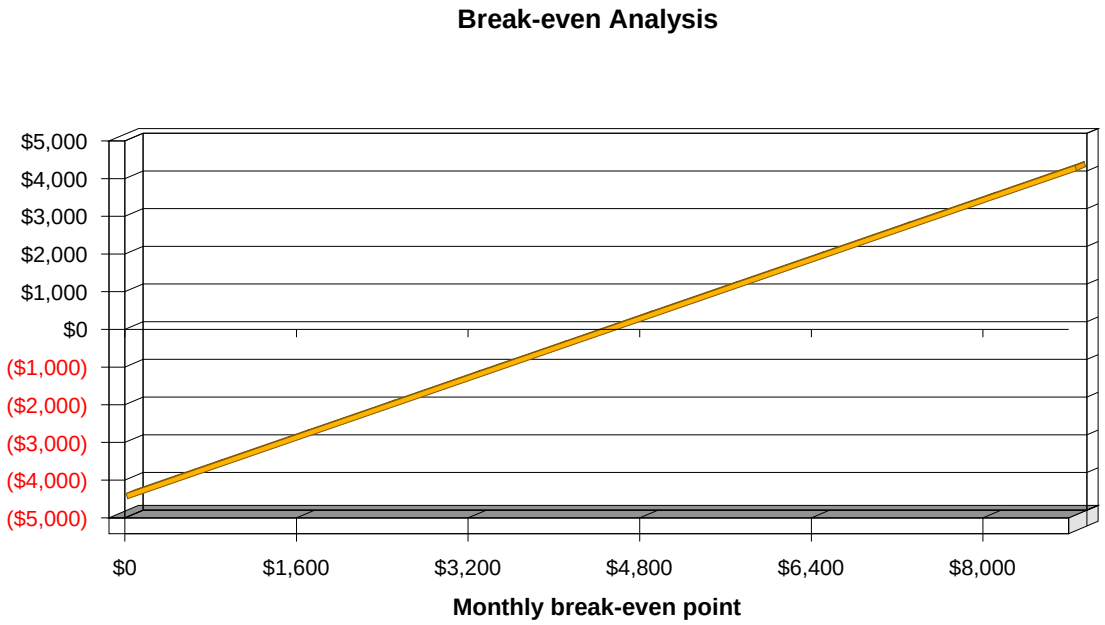
MARS believes that in pursuing this strategy it can continue to grow its operations while still maintaining a positive surplus without the acquisition of any long-term liabilities. Furter detail of our projections is included in the following charts:

- Surplus and Deficit
- Cash Flow
- Balance Sheet

8.1. Break-even Analysis

Current expenses for the 2012 - 2013 season require MARS to obtain an average monthly revenue of $4525.00, or $54,300.00 per year to break even. The 2012 - 2013 season is currently projected to achieve an average monthly revenue of $4592.00, or $55,105.00 for the year. As such, MARS is expected to meet its projected funding goals for the year with perhaps a small surplus.

Break-even Analysis	
Monthly Revenue Break-even	$4,525
Assumptions:	
Average Percent Variable Cost	2%
Estimated Monthly Fixed Cost	$4,451



Break-even point = where line intersects with 0

8.2. Projected Surplus or Deficit

MARS operates on a cash basis paying its bills at the time the expense is incured. Because of this our surplus table will always show that the organization has in either a break-even or positive status. The following areas of the table should be noted:

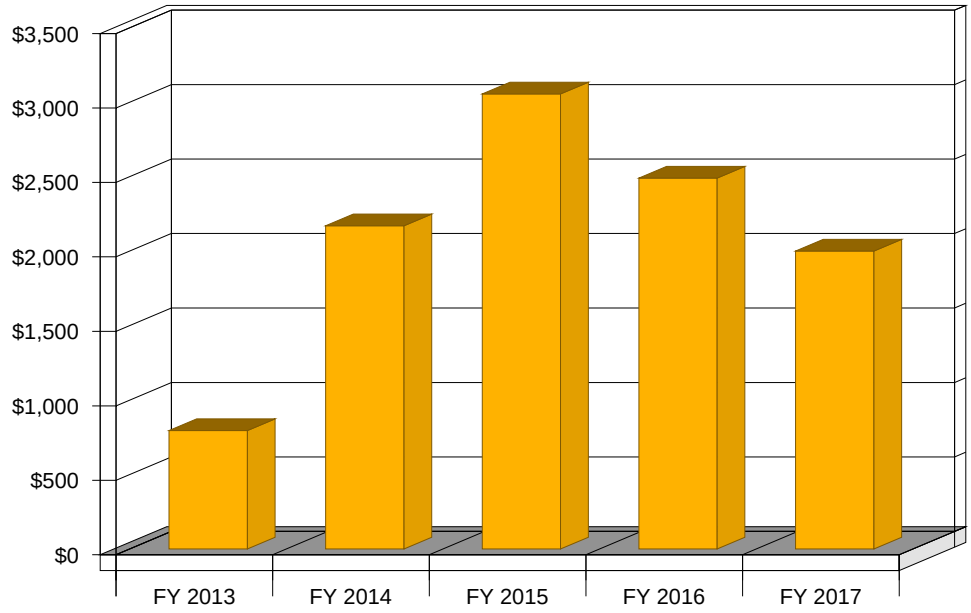
Payroll Expenses: As can be seen MARS has no payroll expenses. All mentors and other support personnel are volunteers donating their time free of charge.

Marketing and Promotion Expenses: All of MARS' marketing and promotion efforts are conducted as part of its outreach activities, or through its fundraising activities such as the sale of organizational Lego models, patches, buttons, etc. As such, MARS has no direct expenses related to a marketing or promotion functions. The costs associated with purchasing its fundraising sale items is included as a direct cost of funding.

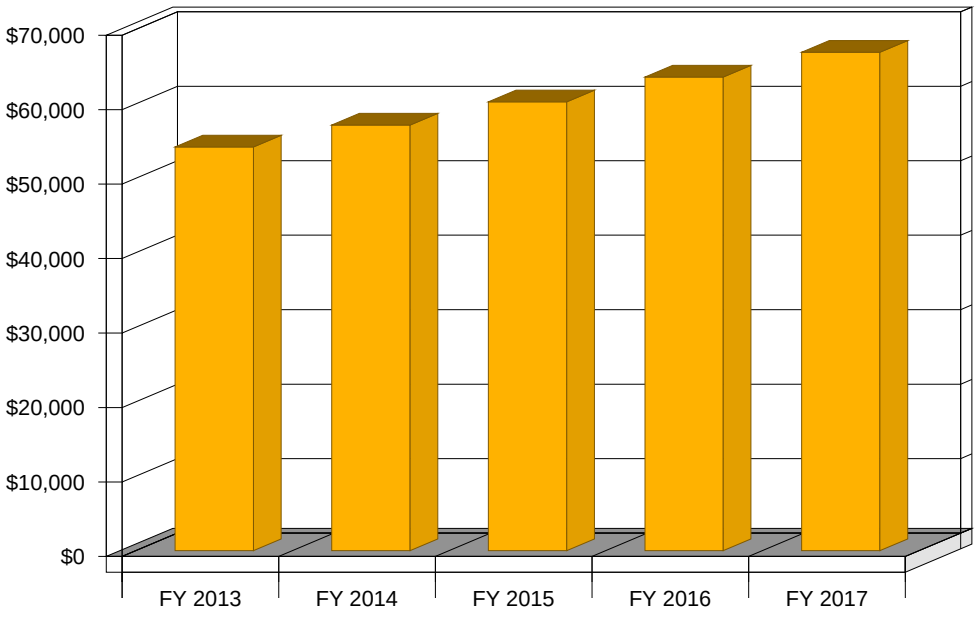
Depreciation: As of the 2012 - 2013 fiscal year, MARS owns no major long-term assets. As such, there are no depreciation expenses recorded.

Surplus and Deficit					
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Funding	$55,105	$58,075	$61,225	$64,575	$67,950
Direct Cost	$900	$930	$960	$985	$1,025
Other Costs of Funding	$0	$0	$0	$0	$0
Total Direct Cost	$900	$930	$960	$985	$1,025
Gross Surplus	$54,205	$57,145	$60,265	$63,590	$66,925
Gross Surplus %	98.37%	98.40%	98.43%	98.47%	98.49%
Expenses					
Payroll	$0	$0	$0	$0	$0
Marketing/Promotion	$0	$0	$0	$0	$0
Depreciation	$0	$0	$0	$0	$0
Event Registration Fees	$15,000	$15,000	$15,000	$18,000	$19,000
FLL Expenses	$2,860	$3,945	$4,035	$4,125	$5,225
Robot Construction	$4,350	$4,480	$4,625	$5,750	$6,900
Outreach	$3,100	$4,400	$5,750	$5,125	$4,500
Travel & Food	$20,000	$21,600	$22,200	$23,500	$24,500
Building Maintenance	$5,500	$1,500	$1,500	$500	$500
Utilities	$2,000	$3,450	$3,500	$3,500	$3,700
Insurance	$600	$600	$600	$600	$600
Total Operating Expenses	$53,410	$54,975	$57,210	$61,100	$64,925
Surplus Before Interest and Taxes	$795	$2,170	$3,055	$2,490	$2,000
EBITDA	$795	$2,170	$3,055	$2,490	$2,000
Interest Expense	$0	$0	$0	$0	$0
Taxes Incurred	$0	$0	$0	$0	$0
Net Surplus	$795	$2,170	$3,055	$2,490	$2,000
Net Surplus/Funding	1.44%	3.74%	4.99%	3.86%	2.94%

Surplus Yearly



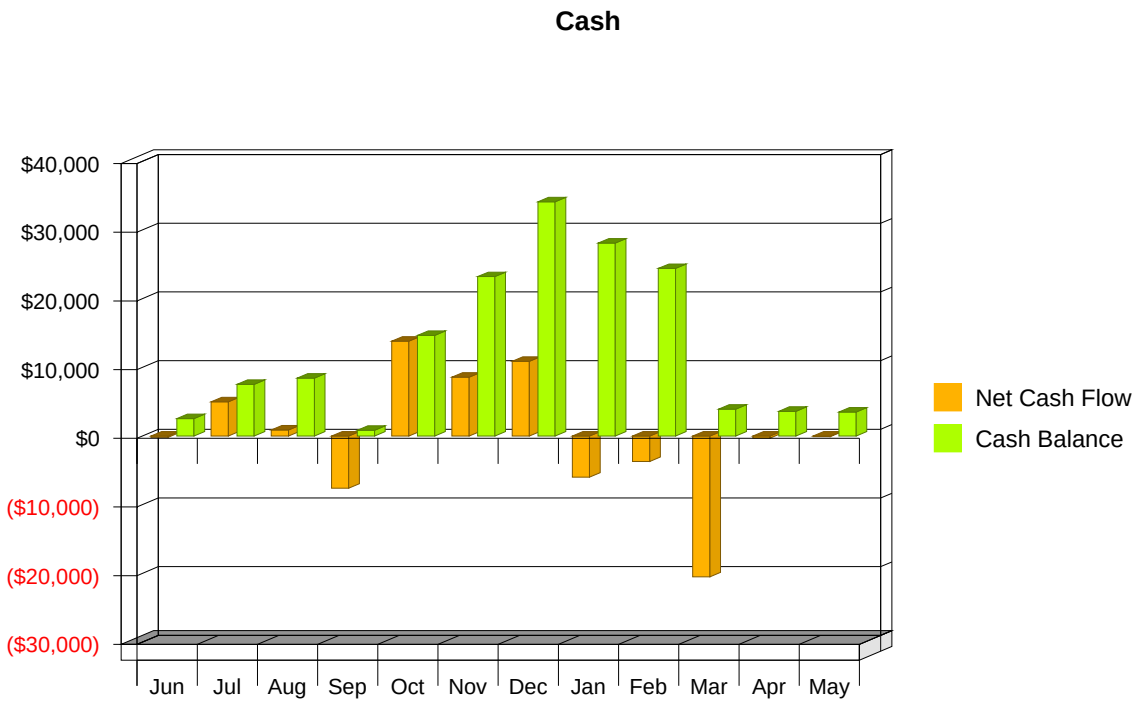
Gross Surplus Yearly



8.3. Projected Cash Flow

As can be seen in the table below, both the majority of MARS' funding occur during the first half of the school year. The majority of the expenditures occur duning the "Build Season" in January and February, and in the competition season from March to May when the team is traveling to competitions.

Pro Forma Cash Flow					
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Cash Received					
Cash from Operations					
Cash Funding	$55,105	$58,075	$61,225	$64,575	$67,950
Subtotal Cash from Operations	$55,105	$58,075	$61,225	$64,575	$67,950
Additional Cash Received					
Sales Tax, VAT, HST/GST Received	$0	$0	$0	$0	$0
New Current Borrowing	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)	$0	$0	$0	$0	$0
New Long-term Liabilities	$0	$0	$0	$0	$0
Sales of Other Current Assets	$0	$0	$0	$0	$0
Sales of Long-term Assets	$0	$0	$0	$0	$0
New Investment Received	$0	$0	$0	$0	$0
Subtotal Cash Received	$55,105	$58,075	$61,225	$64,575	$67,950
Expenditures	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Expenditures from Operations					
Cash Spending	$54,310	$55,905	$58,170	$62,085	$65,950
Subtotal Spent on Operations	$54,310	$55,905	$58,170	$62,085	$65,950
Additional Cash Spent					
Sales Tax, VAT, HST/GST Paid Out	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment	$0	$0	$0	$0	$0
Purchase Other Current Assets	$0	$0	$0	$0	$0
Purchase Long-term Assets	$0	$0	$0	$0	$0
Dividends	$0	$0	$0	$0	$0
Subtotal Cash Spent	$54,310	$55,905	$58,170	$62,085	$65,950
Net Cash Flow	$795	$2,170	$3,055	$2,490	$2,000
Cash Balance	$3,502	$5,672	$8,727	$11,217	$13,217



8.4. Projected Balance Sheet

The pro-forma balance sheets for the time period covered by this plan show a robust net worth growth. The relatively small projeced surplus and lower net worth comparative to future years is due to relatively large ($5,500.00 approx.) capital investment in the team's new practice field, to prepare it for use. It is highly likely that over time the future net worth figures will be adjusted downward as the team appropriates these assets to projects designed to achieve our mission.

Pro Forma Balance Sheet					
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Assets					
Current Assets					
Cash	$3,502	$5,672	$8,727	$11,217	$13,217
Other Current Assets	$0	$0	$0	$0	$0
Total Current Assets	$3,502	$5,672	$8,727	$11,217	$13,217
Long-term Assets					
Long-term Assets	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$0	$0	$0	$0
Total Long-term Assets	$0	$0	$0	$0	$0
Total Assets	$3,502	$5,672	$8,727	$11,217	$13,217
Liabilities and Capital	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Current Liabilities					
Current Borrowing	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$0	$0	$0	$0	$0
Long-term Liabilities	$0	$0	$0	$0	$0
Total Liabilities	$0	$0	$0	$0	$0
Paid-in Capital	$0	$0	$0	$0	$0
Accumulated Surplus/Deficit	$2,707	$3,502	$5,672	$8,727	$11,217
Surplus/Deficit	$795	$2,170	$3,055	$2,490	$2,000
Total Capital	$3,502	$5,672	$8,727	$11,217	$13,217
Total Liabilities and Capital	$3,502	$5,672	$8,727	$11,217	$13,217
Net Worth	$3,502	$5,672	$8,727	$11,217	$13,217

8.5. Long-term Plan

For the purposes of planning and projections, MARS assumes a growth rate in funding of 5% per annum. However, they project their growth rate of expenses to continue at a rate close the the Consumer Price Index (CPI) which averages approximately 3% per year. While these assumptions are reasonable for the near term, it is difficult to accurately project such growth rates in the long-term especially as the U.S. economy is currently extremely volatile, and is capable of drastic change in a matter of months rather than years. Given this, MARS will update this plan yearly and will make necessary changes to its projections as appropriate.

It should be noted, that the growth rates discussed above apply only to currently identified, and established expenses. These projections do not pertain to planned growth in areas such as their activities in Jr. FLL & FLL sponsoring & mentoring, and their outreach programs. The growth rate here is expected to more closely match it projected funding growth of five percent. Should the funding growth exceed its projected rate any additional surplus funds generated will be reinvested into those activities which will most likely contribute to the overall success of our mission.

Funding Forecast

		Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Funding													
Grants	0%	$0	$5,000	$0	$6,500	$0	$0	$0	$0	$0	$0	$0	$0
Sponsors and Donors	0%	$0	$0	$0	$0	$12,918	$12,918	$12,919	$0	$0	$0	$0	$0
Fundraising	0%	$900	$900	$900	$900	$900	$0	$0	$0	$0	$0	$0	$0
Miscelleanous	0%	$350	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Funding		$1,250	$5,900	$900	$7,400	$13,818	$12,918	$12,919	$0	$0	$0	$0	$0
Direct Cost of Funding		Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Fundraising Materials		$0	$900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Row 2		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Row 3		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cost of Funding		$0	$900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Surplus and Deficit

		Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Funding		$1,250	$5,900	$900	$7,400	$13,818	$12,918	$12,919	$0	$0	$0	$0	$0
Direct Cost		$0	$900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Costs of Funding		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Direct Cost		$0	$900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Gross Surplus		$1,250	$5,000	$900	$7,400	$13,818	$12,918	$12,919	$0	$0	$0	$0	$0
Gross Surplus %		100.00%	84.75%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Expenses													
Payroll		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Marketing/Promotion		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Depreciation		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Event Registration Fees		$0	$0	$0	$15,000	$0	$0	$0	$0	$0	$0	$0	$0
FLL Expenses		$1,430	$0	$0	$0	$0	$0	$1,430	$0	$0	$0	$0	$0
Robot Construction		$0	$0	$0	$0	$0	$4,350	$0	$0	$0	$0	$0	$0
Outreach	15%	$0	$0	$0	$0	$0	$0	$0	$0	$3,100	$0	$0	$0
Travel & Food		$0	$0	$0	$0	$0	$0	$0	$0	$0	$20,000	$0	$0
Building Maintenance		$0	$0	$0	$0	$0	$0	$0	$5,500	$0	$0	$0	$0
Utilities		$0	$0	$0	$0	$0	$0	$0	$500	$600	$500	$300	$100
Insurance		$0	$0	$0	$0	$0	$0	$600	$0	$0	$0	$0	$0
Total Operating Expenses		$1,430	$0	$0	$15,000	$0	$4,350	$2,030	$6,000	$3,700	$20,500	$300	$100
Surplus Before Interest and Taxes		($180)	$5,000	$900	($7,600)	$13,818	$8,568	$10,889	($6,000)	($3,700)	($20,500)	($300)	($100)
EBITDA		($180)	$5,000	$900	($7,600)	$13,818	$8,568	$10,889	($6,000)	($3,700)	($20,500)	($300)	($100)
Interest Expense		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxes Incurred		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net Surplus		($180)	$5,000	$900	($7,600)	$13,818	$8,568	$10,889	($6,000)	($3,700)	($20,500)	($300)	($100)
Net Surplus/Funding		-14.40%	84.75%	100.00%	-102.70%	100.00%	66.33%	84.29%	0.00%	0.00%	0.00%	0.00%	0.00%

Pro Forma Cash Flow

		Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Cash Received													
Cash from Operations													
Cash Funding		$1,250	$5,900	$900	$7,400	$13,818	$12,918	$12,919	$0	$0	$0	$0	$0
Subtotal Cash from Operations		$1,250	$5,900	$900	$7,400	$13,818	$12,918	$12,919	$0	$0	$0	$0	$0
Additional Cash Received													
Sales Tax, VAT, HST/GST Received	0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Long-term Liabilities		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Investment Received		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Received		$1,250	$5,900	$900	$7,400	$13,818	$12,918	$12,919	$0	$0	$0	$0	$0
Expenditures		Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Expenditures from Operations													
Cash Spending		$1,430	$900	$0	$15,000	$0	$4,350	$2,030	$6,000	$3,700	$20,500	$300	$100
Subtotal Spent on Operations		$1,430	$900	$0	$15,000	$0	$4,350	$2,030	$6,000	$3,700	$20,500	$300	$100
Additional Cash Spent													
Sales Tax, VAT, HST/GST Paid Out		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dividends		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Spent		$1,430	$900	$0	$15,000	$0	$4,350	$2,030	$6,000	$3,700	$20,500	$300	$100
Net Cash Flow		($180)	$5,000	$900	($7,600)	$13,818	$8,568	$10,889	($6,000)	($3,700)	($20,500)	($300)	($100)
Cash Balance		$2,527	$7,527	$8,427	$827	$14,645	$23,213	$34,102	$28,102	$24,402	$3,902	$3,602	$3,502

Pro Forma Balance Sheet

Assets	Starting Balances	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Current Assets													
Cash	$2,707	$2,527	$7,527	$8,427	$827	$14,645	$23,213	$34,102	$28,102	$24,402	$3,902	$3,602	$3,502
Other Current Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Current Assets	$2,707	$2,527	$7,527	$8,427	$827	$14,645	$23,213	$34,102	$28,102	$24,402	$3,902	$3,602	$3,502
Long-term Assets													
Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Assets	$2,707	$2,527	$7,527	$8,427	$827	$14,645	$23,213	$34,102	$28,102	$24,402	$3,902	$3,602	$3,502
Liabilities and Capital		Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Current Liabilities													
Current Borrowing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-term Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Paid-in Capital	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Accumulated Surplus/Deficit	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707	$2,707
Surplus/Deficit	$0	($180)	$4,820	$5,720	($1,880)	$11,938	$20,506	$31,395	$25,395	$21,695	$1,195	$895	$795
Total Capital	$2,707	$2,527	$7,527	$8,427	$827	$14,645	$23,213	$34,102	$28,102	$24,402	$3,902	$3,602	$3,502
Total Liabilities and Capital	$2,707	$2,527	$7,527	$8,427	$827	$14,645	$23,213	$34,102	$28,102	$24,402	$3,902	$3,602	$3,502
Net Worth	$2,707	$2,527	$7,527	$8,427	$827	$14,645	$23,213	$34,102	$28,102	$24,402	$3,902	$3,602	$3,502