# Space RAIDers
# Team 2537
# Business Plan 2013-2014

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Marcus O.
Business Lead

## 1. Team Mission Statement

**Vision:** Expanding the culture of engineering, leadership, and teamwork throughout the "space" of our community.

**Mission Statement:** Raiding "space" for innovative and new technological ideas to develop the future.

**Slogan:** Bright Stars. Bright Innovators. Bright Futures.

## 2. Team Origin

The team was started in 2007 with seven students, and first attended a competition in 2008 with a plywood and duct taped robot that barely worked. Despite being a rookie team with minimal school support, we managed to win four matches. Every year since we have learned and improved, and by 2010 we were being picked for alliances.

Our past season, 2013, was our most successful year robot-wise. At the Chesapeake Regional Competition we were the second round choice by the fourth seeded team for alliance. With our consistent high accuracy shooter, and strong marketing approach, numerous teams including the top seeded team wanted our team on their alliance. This was partly due to our robot's accurate Frisbee shooting capability and partly to an aggressive marketing campaign to the other teams. Our robot was a consistent performer—we scored the majority of the shooting points for every alliance match.

In 2012 and 2013 we began to expand our outreach activities. We have taken our 2012 robot all over the county, demonstrating it to everyone from small children to county council members and company executives. We began supporting other FIRST activities, mentoring FLL teams and judging at FLL competitions. We started a project to document more team processes and activities to ensure team sustainability. We worked with the school administration to draft a Team Handbook and Team Membership Agreement and formalized the team membership process.

Now, in 2014, our team has grown to 75 active members and 20 active mentors who all contribute to our team and the FIRST Program.

## 3. Organizational Structure

The Atholton Space RAIDers are sponsored by Atholton High School, as part of the Howard County Public School System. Mr. Sean Griffin, the school's designated faculty advisor, has responsibility over the program. Mr. Griffin is supported by the Atholton Technology Boosters Club who coordinates the administrative support to the team, including creating and managing the team roster, organizing the adult volunteer schedules, arranging meals, ordering uniforms, tracking financial information and team expenditures and, in conjunction with the faculty advisor, ensuring compliance with FIRST, school and Howard County Public School System policies .

Every year the team demonstrates the robot to "feeder" middle schools and provides information about our team and about FIRST at New Student Orientation and Back to School Night. In summer 2013, the Tech Boosters organization sent flyers with team and FIRST information out to all the parents in the school. This year we recruited 39 new team members, received almost $1000 in donations and found several new mentors through these activities.

Each fall our students contact last year's sponsors requesting continued partnerships, and reach out to new ones. We have visited our sponsor companies, and invited them to come in and meet us. We have had an excellent success rate; the majority of 2012-13 sponsors have partnered with us again in 2013-2014. The money donated comes in to either the Boosters Club, the Howard County School System Office, or directly to the school.

*< 2013/2014 Leadership team and structure of TEAM 2537 deleted from this version >*

## 4. Relationships

During the fall training season, we provide new team members with mechanical, programing or electrical training. From previous years it was learned that a PowerPoint presentation every week was not well received, so last year our student team leadership requested the opportunity to provide student-led training. This has been very successful for keeping both new and old students fully involved. Meanwhile, the adult leadership developed hands-on training and contests, such as a computer aided design contest and a simple mechanical design contest. Mixing training with friendly, fun competition really engaged our newest team members.

The AHS Space RAIDers are very fortunate in that several of the founding mentors are still with the team today. Their children have long since graduated from AHS, but the mentors come back year after year, providing a rich history and extensive experience with FIRST. In 2012 we had about eight active mentors, in 2013 that number rose to about 14 and this year we have over

20. Each year we have an awards banquet to thank our mentors. Team members write letters to mentors.

Last year our outreach team created a multi-page newsletter for parents and sponsors containing pictures, status on build season activities, including FLL judging, outreach events that we attended, team members bios, “where are they now” alumni bios, and much more. This allows sponsors to know what is being done with their money and how it is helping the team.

## 5. Deployment of Resources

Our team is a force multiplier that expands the impact of STEM in our community. We have presented at Girl Power, where more than a thousand young girls come every year to learn how they can succeed in STEM fields. We presented our robot at the County Tech Council Awards Dinner, and based on the enthusiastic response the county Economic Development Authority is thinking about having a “sponsored table” next year, where local industry leaders can sponsor FRC teams. We visited one of our sponsor companies; afterwards several employees signed onto mentor other FIRST teams in their communities.

This year, due to the large increase of team members, it was a challenge to ensure that all team members get the most out of their FIRST experience. Our solution was to create an apprentice program, we divided our rookies into the different sub teams, and the student team leaders scheduled build season shifts overlapping at Saturday lunch. By letting new students work shifts, we don’t unsafely overcrowd our build space, and all of them can contribute in a meaningful way to the team.

Our team takes great pride in our ability to have a well-stocked pit at competitions that we can use to help others within the community. We consistently support other teams at competitions with our pit equipment and expertise, sometimes machining parts on the spot to ensure our competitors can get their damaged robot competing again. This is all part of our program’s goal to live by the FIRST values of “coopertition” and “gracious professionalism”.

## 6. Future Plans

In 2014 the business team rebranded the team to update our image. We created mission and vision statements, a new motto, a new logo and a new uniform design to reflect our team reinvention. We also changed our team name from “RAID Robotics” to “The Space RAIDers”, paying homage to our past while modernizing it for the future.

This year was the first year that we had students interested in business rather than engineering join the team. We went from one person on the Business/Outreach team to seven. We established a partnership with our school's Future Business Leaders of America club to help us learn and focus our business activities.

This year we planned three fundraisers for robotics related charities. With our first fundraiser we raised over $150 for the Wounded Warrior Project. Next year we plan to grow the business team to support more outreach activities—including conducting more fundraisers, mentoring more FLL teams, and conducting our own service projects.

To date, we have only competed at local FIRST competitions. We want to build a cash reserve to allow us to compete in competitions out of state. Additionally, we need to make some capital investments, such as new computers and a new infrastructure for our pit. Cutting robot build costs will help with that. Finally, we are taking a new approach to fundraising; rather than focusing only on FIRST Robotics we are generalizing our requests to support a broader set of STEM activities. Our school has many STEM clubs and we would like to be able to use some of the money we raised to support their endeavors.

## 7. Financial Statement

Our total budget last year was over $35,000, including competition registration, robot parts, transportation, marketing, meals, uniforms, etc. As we totaled the amount spent at the end of the season we were shocked, and instituted new processes and procedures to manage our funding better. We limited who can purchase robot parts and equipment, and large expenditures require prior approval from the Lead Mentor, the Faculty Advisor, the Tech Boosters president and the Tech Boosters treasurer. The team Hardware Captain did a massive inventory of all tech lab spaces and discovered a great deal of equipment that we can re-use or share with other teams. We adopted a philosophy of "always try the least expensive thing first" and we are planning ahead to avoid excess shipping costs. These measures enabled us to reduce our robot building costs by almost two thirds. Other costs (meals, transportation, uniforms) have gone up due to the increase in students on the team, but some of these costs are paid for by parents.

| Budget Comparison | 2013-2014 | 2012-2013 |
|---|---|---|
| Competition registration | $9450 | $9300 |
| Bus Transportation for students/Truck rental for robot and pit equipment | $2500 | $1839 |
| Parent Booster membership | $95 | $95 |
| Marketing and Outreach (banners/robot decals/flyers/buttons/beads) | $1000 | $812 |
| Student Meals during Build Season, Awards Banquet | $7000 | $6268 |
| Team uniforms (shirts, drawstring bags, lanyards) | $4000 | $2311 |
| Equipment (electronic, mechanical, practice field, pit, tools, computers etc.) | $8000 | $21731 |
| Shipping | $300 | $900 |
| TOTALS | **$32,345** | **$43,256** |
| Not funded by parents | **$21,345** | **$34,677** |

## 8. Risk Analysis

**Strengths**

Our school provides meeting spaces, classrooms with computers, a woodshop, exclusive use of a large storage closet, and priority use of a 3D printer. We are fortunate to have many sponsors that provide funding. Many of our mentors are also sponsors, and we have sponsors that have become mentors after seeing what we do. Team parents provide a great deal of administrative, fundraising and logistical support.

**Weaknesses**

Many of our sponsors are government contractors, or divisions of the federal government. If our sponsors experience budget cuts, as has happened in the last year or so, they reduce or cut funding for us. We are working to mitigate this risk by reaching out to technical leaders in the

county that are not government related.

**Opportunities**

Our team has seen substantial growth in previous years. At this rate of growth we will have 90 active members next year. It is a challenge to keep everyone involved, however we see it as an opportunity to possibly separate into an FRC and an FTC club. Additionally, bringing on more students supports our goals of expanding our business and outreach activities. We have begun partnering with other FRC teams to identify shared space that we can all use during training and build season.

**Threats**

We cannot meet when the schools are closed. We have had many meeting cancellations because of snow, pushing back our schedule. Our school is remodeling our space over the summer and fall, so meeting and training next year could be an issue. Additionally we need to find storage during that time to protect our equipment investment.