



***Business Plan  
2012-2013***

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# Executive Summary

## Mission Statement

Spectrum's mission is to create and cultivate opportunities in which students are able to grow mentally and realize their true potential. Our students develop life skills through the promotion of premier qualities, such as amity, volunteerism, dedication, and ebullience. As an engineering team, we believe that every team member has a special place in the process and creation of our robots. We endorse team unity and bonding through integrity, confidence, and chivalry. Our team deepens the bonds between students by allowing them to interact in a safe and nurturing environment that promotes an exploration of ingenuity. We hope to facilitate a love of individuality through the appreciation of the students varying abilities and qualities.

## Team Facts

<b>Nickname</b>	Spectrum
<b>Team Number</b>	3847
<b>Schools</b>	Strake Jesuit College Preparatory St. Agnes Academy
<b>Location</b>	8900 & 9000 Bellaire Blvd, Houston, Texas ( <a href="#">map</a> )
<b>Founded</b>	Nov 2010 as "Roaring Crusaders" Rebranded on Nov 7, 2011 to "Spectrum"
<b>Members</b>	50+ high school students Seniors: 24 Juniors: 15 Sophomores: 8 Freshmen: 12
<b>Engineering Coach</b>	Allen Gregory 10+ years experience with FRC and High School Robotics Competitions
<b>Sponsors</b>	ExxonMobil, Texas Workforce Commission, Houston Endowment, Solarcraft Inc., and TX/RX Labs
<b>Awards</b>	2012 Regional Chairman's Award - Dallas-West Regional 2011 Rookie Highest Seed - Lone Star Regional 2011 Rookie Inspiration Award - Lone Star Regional

## What We Do

- Promote the growth of our team members into exceptional people.
- Design, develop, and build robots for high school robotics competitions (FRC and VRC).
- Develop useful skills in the areas of problem solving, creativity, cooperation, communication, manufacturing abilities, programming, and media creation.
- Promote continued education and create opportunities for students to obtain scholarships and internships.
- Support the growth and development of engineering and technology programs in our local community and schools.
- Collaborate with other schools and organizations to better support the development and growth of Science, Technology, Engineering, and Math (STEM) programs.
- Strengthen our community by volunteering with local non-profit organizations.

## Summary of Growth

- 2010 – 15 Students,  
3 competitions per year
- 2012 – 50+ Students,  
8+ competitions per year (FRC Regionals, FRC Off-seasons, and VEX Events)
- Actions taken to Grow and Develop the Team:
  - Video and print promotion within the school and local media
  - Robotics presentations to prospective 8th grade students
  - Fall “Interested Students” recruiting Open House
  - Year-Round work on technical and outreach activities
  - Interviews and formal feedback from student team members and parents
  - Formal business planning
  - Strengthen relationships with team sponsors
  - Foster stronger community partnerships with local high schools and organizations

## Program Growth

- Added the VEX Robotics Competition to the team's schedule (Sept. 2012)
- Hosted the inaugural Houston VEX League Competition (10/6/2012)
- Hosted the Houston FRC Mock Kickoff (12/8/2012)
- Initiated the "Mentor for a Day" program to bring in engineers and scientists from the community to share their work and experience with the team
- Designed the Spectrum Summer Workshop Series to teach technical FRC skills to Houston area students
- Developed the Houston Mentor Workshop, a two day technical and team building workshop for new mentors
- Scheduled and hosted Texas Mentor Talks - a series of community calls for Texas FRC mentors to discuss issues during build season
- Continue to volunteer at science and robotics events

## Community Outreach Growth

- Canstruction - designed and built a structure for the Houston Canstruction engineering design challenge to support hunger awareness and the Houston Food Bank
- Developed SPECTaculaR – a two week long Summer Robotics Program taught at the Spring Branch Family Development Center Boys' and Girls' Club
- Began working with The Last Organic Outpost, community garden in Houston's 5<sup>th</sup> Ward
- Supported Harris County 4-H Robotics Programs

## Program Summary

Spectrum's primary goal is to foster the development of our student members into extraordinary people, who are able to use their ingenuity, generosity, and enthusiasm to help others. Through engineering competitions and a variety of outreach programs, our members develop the attitudes and abilities needed to excel.

Spectrum is the combined engineering team of St. Agnes Academy and Strake Jesuit College Preparatory. We compete in two main programs: the VEX Robotics Competition (VRC) and the FIRST Robotics Competition (FRC). VRC is primarily a fall competition and is used to introduce team members to the engineering design process and many of the technologies that are standard in modern robotics. VRC allows for small groups of students to collaborate on an engineering challenge. FRC is our spring competition that requires all of our team members to be working on the same project together at once. FRC is an extremely time and resource limited competition that stretches our team members' creativity, intelligence, and work ethic. The competition demands that we design and build a robot for the year's game in just 45 days.

Gracious Professionalism is the ethic upon which these competitions and our team are built. Gracious Professionalism goes beyond sportsmanship to incorporate empathy for all people with which you interact and a sense of ownership and pride in everything that you do. It incorporates an understanding that you can only truly be driven to do your best when your opponent is at their best. A simpler definition is given by this quote "Always act in a way that would make your grandmother proud." - Woodie Flowers.

Our team understands that our mission goes beyond our schools. To that end, we encourage the development of STEM initiatives and the growth of engineering teams at other schools in our community. Our team has provided a dependable volunteer force to many of the local robotics competitions and has collaborated with many organizations to strengthen our community and ourselves.



**Design Session During Kickoff**



**Food Bank Volunteering**



**Working on our FRC Robot**

# Spectrum's History

## History

Spectrum evolved out of two determined teams and copious amounts of enthusiasm. We were originally the rival engineering teams of Strake Jesuit College Preparatory, an all-boys school and St. Agnes Academy, an all-girls school. The St. Agnes Engineering Team began in 1996, participating in various competitions, while the Strake Jesuit Engineering Team began in 2007. After competing against each other for four years in the BEST competition, we were interested in undertaking a new challenge that would test our abilities to the extreme.

Our students met to discuss the future of such a program individually and began discussing the possibility of creating a joint FRC Team, which we knew would be a huge undertaking. However, we also knew that joining forces would provide an opportunity to create a team stronger than St. Agnes or Strake Jesuit could create separately. With our shared passion for robotics, we resolved our differences and began to coordinate our actions together on our first team challenge: garnering the support of sponsors and our school administrators. The joining of the two teams is a major part of Spectrum's history, and defines us as a team that is willing and able to overcome any obstacle by using the many talents that each member contributes.

In 2012 after our sophomore season, we decided to combine the two teams for more than just FRC, and we began working together on all projects. The individual engineering teams were absolved, and Spectrum is now a yearlong engineering program.

## St. Agnes Academy

St. Agnes Academy opened in 1906 as an all-girls preparatory school for the young women of Houston. It has grown from just a few classes of students to over 900 girls.

St. Agnes Academy has had an engineering team since 1996, which participated in the following competitions: 1996—National Engineering Design Challenge; 1997—Texas Experimental Aeronautics Solution (TExAS); 1998-2000—Texas Engineering Challenge; and 2001-2011—Boosting Engineering, Science, and Technology (BEST). The team received over twenty awards in its history.



## Strake Jesuit College Preparatory

Strake Jesuit College Preparatory enrolled its first class in 1961 and has been promoting young men in the Houston area to become "Men for Others" ever since.

Founded in the fall of 2007, the Strake Jesuit Engineering Team competed in 2008-2011—Boosting Engineering, Science, and Technology (BEST); 2009—The Junior Engineering Technical Society (JETS); and 2010-2011—VEX Robotics Competition.



*"She has finally found an extracurricular activity that she's dedicated and passionate about."  
- Team Parent*



# Program Goals

## Short Term Goals

- Cultivate the abilities and character of all team members
- 100% College Placement of our team members
- Earnestly compete for awards at competitions
- Start and mentor engineering teams
- Host and volunteer at robotics tournaments and events

## Long Term Goals

- Gain recognition for Science, Technology, Engineering, and Math (STEM)
- Support the growth of educational robotics and STEM programs
- Strengthen our local community through volunteer outreach
- Inspire people to be exceptional

## Success Measures

- 100% of Spectrum graduates are attending college
- 80% of graduates are pursuing a STEM major



**SPECTaculaR Summer Program: Teaching Students about Robotics 6/2012**



**Preparing Good Luck Bags for the FRC Lone Star Regional 3/2012**



**Team Meal 11/2012**



**Tour of Solarcraft Inc. facility 11/2012**



# Program Benefits

## For Students

- “The hardest fun they’ll ever have.”
- Character building and personal growth
- Promotes self confidence
- Leadership and project management experience
- Cooperation skills
- Engineering and technology literacy
- Business development and communication skills
- Community outreach and service
- Develops creativity
- Strengthens logic skills
- \$16 Million+ in scholarship opportunities
- Internship opportunities
- Increased interest in STEM
- Exposure to STEM career opportunities
- Able to apply school curriculum to real world projects
- “Only sport where every player can turn pro.”



**Spectrum's Pit at the Lone Star Regional  
4/2012**

## For Mentors

- Enriching opportunity
- Community service
- Engineering and technological experience
- Project management and leadership experience

## For Schools

- Math, Science, Language Arts, Business, Finance, Computer Science, Fabrication, and Engineering
- Promote STEM Education
- Character building program
- Recognition
- More independent and engaged students

## For Sponsors

- Creates pipeline for interns and future employees
- Engages employees in volunteerism opportunities
- Provides employees with team-building opportunities
- Outreach to the community
- Recognition in the community



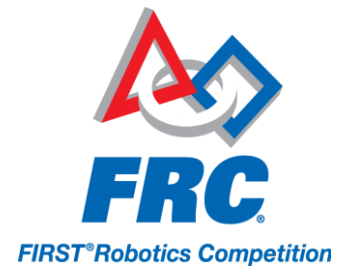
**Volunteering at The Houston  
Underwater Robotics Rodeo 5/2012**

*“Learning so many new abilities and meeting so many new friends I would not have met otherwise. Many of the abilities I acquired by being on the engineering team, I will be able to utilize them in everyday life.”*

*– Team Member*

## FIRST Robotics Competition (FRC)

FIRST (For Inspiration and Recognition of Science and Technology) is a nonprofit organization dedicated to the inspiration of students and the growth of science, technology, and engineering recognition in the world. FIRST is sponsored by some of the world's leading technology companies: GM, Motorola, Google, Chrysler, Johnson & Johnson, NASA, Boeing, National Instruments, FedEx, and Xerox to name a few.



FRC is the varsity level competition of the FIRST organization. FRC unites high school students with engineering and technology mentors in a global robotics competition of over 2,500 teams. The competition begins the first Saturday in January when the game rules are released to the teams. The robots compete in challenges that are similar to sports; from ball shooting to hanging game pieces on a grid, the games are different each year. After the rules are released, teams have just six short weeks to design and build a robot to play the game. The teams compete at regional events across the country, and then the best of the best move on to the world Championship event held in April of each year.

The challenge is extremely complex and demanding because the goal of the program is not to train students to build robots but to educate students on how to work passionately and to complete seemingly impossible tasks. The competition involves extremely advanced systems (the same embedded controller used by DARPA Urban Challenge teams, by FEDEX to automate fire suppression on their freight planes, and by the oil and gas industry to monitor pipelines) that forces students to broaden their understanding of technology. Additionally, students become accustomed to quick comprehension and application of the acquired knowledge in real world situations.

FRC is built on the principles of Gracious Professionalism and Co-operation. These ideals provide an ethic that is unique amongst most competitions. FRC teams do not just strive to win each event in which they compete; they also try to make sure that the rest of the teams competing are performing at their best and that everyone is having a good time. FRC teams train and mentor other teams and work together to make more competitive machines.

FRC also stresses the development of each student outside of their technical skills. Each FRC team is run like a small corporation. Not only do they have to make a successful product (the robot) but most market their team, develop a business plan, manage the finances for the competition, and produce an annual report called a Chairman's Award Entry. The Chairman's Award, FIRST's highest honor, celebrates a team that best models the ideals of FIRST in all aspects, focusing heavily on community partnerships and outreach.

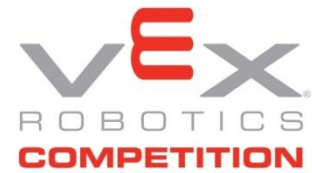
FRC is the "hardest fun" high school students can have. It builds confidence, qualities, and skills that students will take with them for the rest of their lives.



**Working on FRC Robot at Practice Session 3/2012**

## VEX Robotics Competition (VRC)

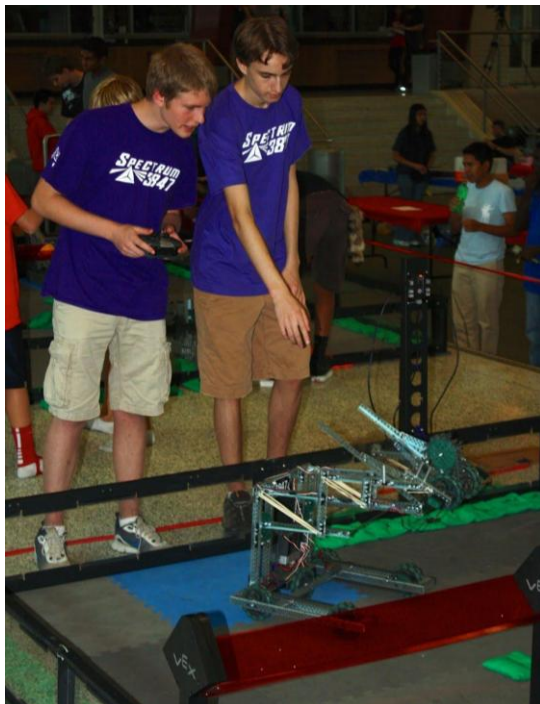
The VEX Robotics Design System is a robotics construction system that was developed by Innovation FIRST Inc. based in Greenville, TX. The VEX Robotics Design System can be considered the “Erector Set” for the modern times. It allows foundational engineering knowledge to be acquired through hands on development of robotic systems.



The Vex Robotics Competition (VRC) is managed by the Robotics Education and Competition Foundation (RECF) a non-profit organization that organizes student robotics competitions around the world. VRC has over 4,800 teams from twenty countries playing in over 300 tournaments worldwide each year. VRC allows small groups of students to design and construct a robot; while they learn and apply the fundamentals of engineering, math, and science.

Houston VEX puts on several competitions in the Bayou city each year, so travel costs for this competition are minimal. Spectrum is one of several teams that host a tournament at their schools.

VRC is a smaller challenge than the FIRST Robotics Competition and Spectrum uses it to introduce new students and new schools to competitive robotics. The smaller size of the competition also allows students to iterate their robot designs many times till they find optimal solutions to the game challenges. Spectrum competes in VRC as a learning tool for our younger students and is a way to support the growth of educational robotics programs at more schools in our community.



**Competing in VRC 10/2012**



**Repairing a VRC Robot 10/2012**

*“He is proud of the team. He looks forward to working harder next year and becoming more involved with the team.” – Team Parent*

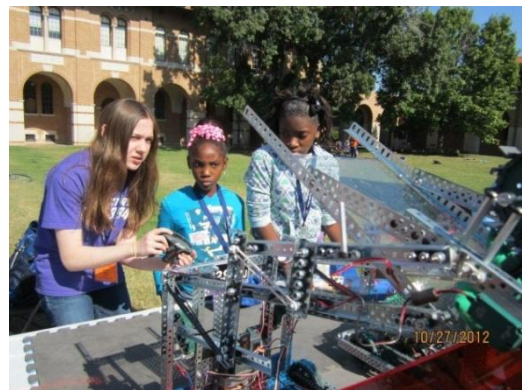


## Community Projects

- **Texas Bowl Demonstration (12/28/2012)**
  - Presented our 2012 FRC robot at the Texas Bowl with Teams 57 and 624. Approximately 50,000 people had the opportunity to see the exhibition.
- **Canstruction Houston (11/10/12)**
  - Students designed and constructed a sculpture using only canned food products. It was on display to the public to raise hunger awareness, and afterwards over 3,500 cans were donated to the Houston Food Bank.
- **Society of Women Engineers Conference Demonstration (11/9/2012)**
  - Demonstrated our FRC robot and encouraged mentoring of FIRST programs. Spoke with women engineers from all around the country.
- **Sally Ride Festival (10/22/2011 & 10/27/2012)**
  - Students went to Rice University and gave demonstrations of the VEX and FIRST robots. Each year over 800 girls get introduced to robotics at this event.
- **Best Buy Teen Tech Summit (9/18/2012)**
  - Worked with FRC#57 to give 6<sup>th</sup>-8<sup>th</sup> grade students a simple engineering challenge and then to talk to them about our robotics programs and how our robot works.



Teaching students at Best Buy Teen Tech Summit 9/2012



Houston Sally Ride Festival 10/2012:  
Over 800 young girls exposed to robotics



9 Canstruction Houston Team Photo 11/2012



Society of Women Engineers  
Conference 11/2012

- **Last Organic Outpost Urban Garden (8/11/2012)**
  - Volunteered at the Emile St. Urban Farm in Houston's Fifth Ward. We prepared the soil beds for the fall planting.
- **Boys and Girls Club Robotics Demonstration (6/15/2012)**
  - Demonstrated the larger FIRST robot, "Violet", for the children at the Boys and Girls Club, so they could be exposed to engineering.
- **SPECTacular Lego Robotics Course (6/11/2012 - 6/22/2012)**
  - Developed a two-week long summer robotics program that was offered to students at the Spring Branch Family Development Center Boys & Girls Club during the summer. During this camp, we instructed students on constructing and programming Lego robots.
- **Houston Food Bank (11/19/2011 & 11/3/2012)**
  - Sorted donated food and made care packages for the holidays. Prepared boxes of food for senior citizens. Assembled "Backpack Buddy" bags to be given to children that do not have enough to eat over the weekend.
- **Habitat for Humanity (5/7/2011)**
  - Partnered with Habitat for Humanity to help build the framework for a home.



**Volunteering at Last Organic Outpost Garden 8/2012**



**Volunteering at Houston Food Bank 11/2012**



**Working with Habitat for Humanity 5/2011**



**Team Photo at the Houston Food Bank 11/2011**

*"Their determination and inspiring dedication to serve their community is an example for other teams"*  
 – Dallas West Chairman's Judges 2012



## Engineering Projects

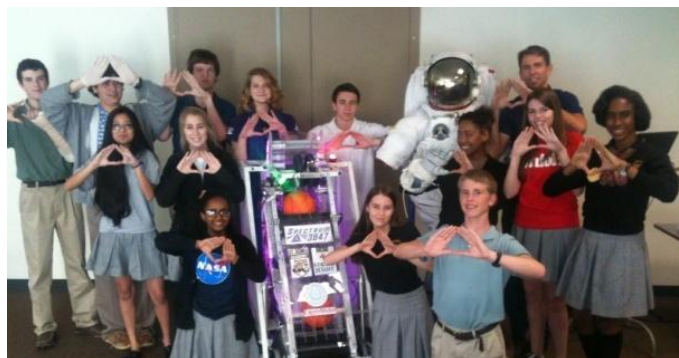
- **FRC Week Zero Event (2/16/2013 – 2/18/2013)**
  - Opened our lab and partial field to all Houston teams for the 2013 Houston Pre-Bag Scrimmage. Teams were able to practice with and work on their robots.
- **Houston Area FRC Mock Kickoff (12/8/2012)**
  - Hosted a Mock Kickoff where we lead FRC teams through the engineering design process.
- **Hosted inaugural Houston VEX League Competition (10/6/2012)**
  - 30+ teams from the Houston area came to Strake Jesuit for the inaugural Houston VEX League Event. Our students and parents provided 90% of the volunteers for the event.
- **Volunteering at Robotics Competitions**
  - Fulfilled various volunteer positions at 15 competitions including BEST, VEX, FLL, FRC, and Underwater Robotics Rodeo competitions; including score keeper, referee, field reset, field construction, etc.
- **Mentor for a Day (9/2012 - Present)**
  - Brings in engineers and scientists from the community to show their work and talk about their passion for engineering and science. This will inspire students and broaden their understanding of engineering disciplines. AKA: “Engineer Show and Tell”
- **Texas Mentor Talk (9/2012 - Present)**
  - A weekly phone call during the FRC build season that allows mentors from around Texas to communicate and exchange ideas.



Spectrum members volunteering at the VEX League Competition we hosted at Strake Jesuit 10/2012



Volunteering at Space City BEST 10/2011



Mentor for a Day: Zeb Scoville from NASA's EVA Team brought a space suit to St. Agnes Academy 9/2012

- **FRC Beta Test Team 2013**
  - Spectrum was selected as an FRC Beta Test team prior to the 2013 FRC season. We test and evaluate the new updates to the standard Java software before they are released to teams.
- **Support Harris County 4-H Robotics (10/2012 - Present)**
  - Support robotics programs at ten local elementary and middle schools to compete in a challenge revolving around the issues of food deserts in our local communities.
- **Houston Summer Design Challenge (8/8/2012-8/18/2012)**
  - Co-Hosted with the Discobots (FRC#2587) a summer CAD design challenge, to incentivize students from around Houston to learn 3D modeling.
- **Spectrum Summer Workshop Series (6/28/2012 - 7/07/2012)**
  - Hosted workshops for local Houston area robotics students in the fields of programming, electrical and control system design.
- **Houston FRC Mentor Workshop (7/13/2012 - 7/14/2012)**
  - Hosted a workshop for new FRC mentors, with FRC#1477, over the course of two days; the workshop consisted of building an entire kitbot with electronics, discussing team dynamics and the details of running an FRC team.
- **Houston Pre-bag Scrimmage (2/18/2012)**
  - Co-Hosted with the Discobots (FRC#2587) the 2012 Houston Pre-Bag Scrimmage. This event allowed teams to test their robots on the field that our teams constructed.
- **Rookie Engineering Team Support sessions (1/10/2012 & 1/29/2012)**
  - Partnered with FRC#3103, FRC#57, and FRC#2587 to support rookie FRC teams as they designed and built their first FRC robots. Talked to them about design and build strategies that will allow them to be competitive their rookie seasons.



**Building Robotics Tables for Elementry and Middle Schools 10/2012**



**Spectrum helping rookie FRC teams assemble their electronics 1/2011**

*"I think she has grown a lot through this past year and has discovered a major in college which she thinks will keep her interested." – Team Parent*



# Team Development

## Team Building

Spectrum encourages enduring relationships and unity amongst team members by bonding through gatherings such as Frisbee games, paintball matches, intramural sports, parties, and dinners.



Spectrum's Kickball Team 3/2012



Spectrum Playing Paintball 5/2012

## Organization/Structure

Spectrum does not have a concrete structure or organization of occupations. We operate in a more relaxed environment where there are no distinctly assigned duties. Since many of our students operate in multiple fields of work, we created a collection of disciplines. Therefore, in light of such ambiguity, we do not attempt to force structural conformity onto the team, so the students may explore and participate in multiple fields as opposed to one. In a progressive environment such as this, we hope to foster a more nurturing and enlightening experience for the students.

- **Programming**- encompasses students who work with applications of the computer science field.
- **Mechanical**- involves the physical and structural aspects of constructing a robot.
- **Electrical**- includes the application of electrical and wiring knowledge.
- **Design**- involves the utilization of the students' creativity and ingenuity to create plans for the robots.
- **Media**- deals with the task of promoting internal and external communication on the team.
- **Logistics**- involves applying organizing, writing, and presenting skills to help manage the team.
- **Service Outreach**- organizes and promotes the teams' volunteer efforts.

*"The team is so close to one another. It would have been awful having to work as much as we did on the robot with a disjointed group of people. This was really improved through our team dinners and outings and by the team approach to problems. We all had the same ups and downs." – Team Member*

# Team Communication Methods

## Google Group Email List

We have found the use of a Google Group to be one of the best ways to keep everyone up to date and to keep the team progressing. We have all of our team members on the list so it's very easy to email everyone important updates.

## Nightly Build Log

We produce a nightly blog entry ([3847.blogspot.com](http://3847.blogspot.com)) about our team for the general public during build season. This allows members of the team, parents, and other teams to follow along with our progress. During the off-season we update the blog about once a week with what's been happening with the team.

## Facebook Group

We have a Facebook group where the team members are able to speak to each other more readily. It's also where we upload all of our photos and videos during the build season.



## Team Calendar

Our team calendar has all of our events for the coming year. This allows team members and parents to quickly get an idea of upcoming team happenings.

## Document Sharing

We use Google Docs for all our documents, spreadsheets, and presentations. This allows multiple team members to edit the documents at one time and ensures everyone has the most current versions. We also have a team Dropbox.com account that allows us to share other files and publish items to the web easily.

## Code Repository

Our programming team is using GitHub.com to collaborate on software development. Not only is it easy to use, but also allows us to version our code, which guarantees backups.





*"Engineering Team is HER LIFE (her quote). She has so much fun and has learned to interact with other students and have fun." – Team Parent*

# Marketing Strategy

## Targets and Goals

- Students in our schools
  - Spark an interest in STEM, join the team, participate in events
- Students in other High Schools
  - Spark an interest in STEM, start a team at their school, participate in events
- Students in elementary and middle schools
  - Spark an interest in STEM, enroll at one of our schools for high school, start a team at their school, participate in events
- Parents
  - Inform them about what the team is doing, mentor the team, support the team, find mentors and sponsors for the team
- Alumni
  - Inform them about what the team is doing, support the team, spread programs to their new communities
- General Public
  - Promote educational robotics programs and their benefits, support programs in their community, spread programs to new communities

## Methods

- Website ([www.spectrum3847.org](http://www.spectrum3847.org))
  - Hosts information about our team, programs, and robots. Links to all of our other media outlets. Holds resources for other teams and members of our own team.
- Blog ([3847.blogspot.org](http://3847.blogspot.org))
  - Weekly updates during the off season allow for stakeholders to learn what the team is currently doing. During build season nightly updates keep team members and stakeholders apprised of the robot's progress.
- Twitter ([www.twitter.com/spectrum3847](http://www.twitter.com/spectrum3847))
  - Allows for us to broadcast our activities to many people and other robotics teams. We also promote engineering through links to interesting news and articles for our team members and others. 
- Facebook Page ([www.facebook.com/Spectrum3847](http://www.facebook.com/Spectrum3847))
  - Easy access to the activities of the team along with photos and videos of our projects. 
- Handouts and Flyers
  - Direct media to students in our school and to the community about our events.
- School Television Programs (VTV & SJET)
  - We utilize announcements on our in school television programs to encourage students to come to STEM activities and Spectrum's events.
- Newspaper articles
  - We have been highlighted in both of our school newspapers on several occasions and also within several of our community newspapers. This allows us to reach an audience that doesn't normally attend our events.

## Financial Plan

### 2012 Projected Expenses

	Total	St. Agnes	Strake	Notes
FRC Home Regional Registration	(\$5,000.00)	(\$2,500.00)	(\$2,500.00)	Potential Grant
FRC Away Regional Registration	(\$4,000.00)	(\$2,000.00)	(\$2,000.00)	
FRC Championship Registration	(\$5,000.00)	(\$2,500.00)	(\$2,500.00)	Potential Grant
VEX League Registration	(\$400.00)	(\$200.00)	(\$200.00)	
VEX Regional #1 Registration	(\$300.00)	(\$150.00)	(\$150.00)	
VEX Regional #2 Registration	(\$300.00)	(\$150.00)	(\$150.00)	
VEX Worlds Registration	(\$750.00)	(\$375.00)	(\$375.00)	
FRC Construction Budget	(\$4,000.00)	(\$2,000.00)	(\$2,000.00)	
VEX Robot Parts	(\$3,000.00)	(\$1,500.00)	(\$1,500.00)	
FRC Away Regional Hotel	(\$5,000.00)	(\$5,000.00)		Paid by Students
Transportation to FRC Championship	(\$8,500.00)	(\$4,250.00)	(\$4,250.00)	Coach Bus
Hotels for FRC Championship	(\$5,000.00)	(\$5,000.00)		Paid by Students
Transportation to VEX Championship	(\$8,000.00)	(\$4,000.00)	(\$4,000.00)	Airfare for 20
Hotels for VEX Championship	(\$4,000.00)	(\$4,000.00)		Paid by Students
Miscellaneous	(\$2,000.00)	(\$1,000.00)	(\$1,000.00)	Tools, presentation material, handouts
T-shirts and Items	(\$1,500.00)	(\$1,500.00)		Paid by Students
Total	(\$56,750.00)	(\$36,125.00)	(\$20,625.00)	
Total Expenses - Income	(\$31,250.00)	(\$15,625.00)	(\$15,625.00)	
No VEX Worlds	(\$22,500.00)	(\$11,250.00)	(\$11,250.00)	
No FRC Championship	(\$22,750.00)	(\$11,375.00)	(\$11,375.00)	
No VEX or FRC Championships	(\$14,000.00)	(\$7,000.00)	(\$7,000.00)	
NO GRANTS & NO Championships	(\$19,000.00)	(\$9,500.00)	(\$9,500.00)	

### 2012 Potential Income

	Total	St. Agnes	Strake	Notes
Registration Grant	\$5,000.00	\$2,500.00	\$2,500.00	Potential Grant
Texas Workforce Championship Grant	\$5,000.00	\$2,500.00	\$2,500.00	Potential Grant
FRC Away Regional Hotel	\$5,000.00	\$5,000.00		Paid by Students
Hotels for FRC Championship	\$5,000.00	\$5,000.00		Paid by Students
Hotels for VEX Championship	\$4,000.00	\$4,000.00		Paid by Students
T-shirts and Items	\$1,500.00	\$1,500.00		Paid by Students
Total	\$25,500.00	\$20,500.00	\$5,000.00	

# Contingency Plans

(Modeled after FRC#234 Cyber Blue)

The following standard format is used:

RISK	Statement of the Risk Item
Likelihood	(Probability) What is the "probability" of the risk occurring <ul style="list-style-type: none"> <li>• 3 High Greater than 50% chance</li> <li>• 2 Medium between 25 and 50% chance</li> <li>• 1 Low Less than a 25% chance</li> </ul>
Impact Level	If the event occurs, what is the impact to the team? <ul style="list-style-type: none"> <li>• 3 High Major disruption to the team, Threatened team continuation</li> <li>• 2 Medium Reduced participation in FIRST events</li> <li>• 1 Low Minor impact, Reduced activity level</li> </ul>
Risk Score	1 – 9 Likelihood (Probability) x Impact Score Higher scores require increased attention <ul style="list-style-type: none"> <li>• 9 Key Risks (RED) – Critical and Require Significant Attention</li> <li>• 4 – 8 Major Risks (YELLOW) – Require Action and Management</li> <li>• 1 – 3 Minor Risks (GREEN) – Require Some Action but are Lower Importance</li> </ul>
Impact on Team	Basic Description of what the impact to the team would be
Action	Actions the team is taking to alleviate the occurrence of the risk, or to minimize the impact if it does occur

## RISK: Loss of Engineering Coach

**Likelihood:** 2 - Medium

**Impact Level:** 3 - High

**Risk Score:** 6 - Major

**Impact on Team:**

- Team can sustain for a short period of time with volunteer mentors from the school and parents
- Difficult to coordinate travel and building use
- The school administrations would need to recruit a new Engineering Coach

**Action:**

- Acquire a strong volunteer mentor base
- Document activities and procedures (travel forms, reimbursements, suppliers)
- GOAL: Work to maintain two main mentors on team

## RISK: Engineering Coach not able to travel/sick at competition

**Likelihood:** 1 - Low

**Impact Level:** 2 - Medium

**Risk Score:** 2 - Minor

**Impact on Team:**

- Team would have trouble transporting itself to competition
- Students would fill the roles of the main mentor
- Volunteer staff would travel with the team

**Action:**

- Have volunteers in place in case main mentor unable to drive students to competition
- Document activities and procedures of main mentor (travel forms, tasks, etc.)

## **RISK: Serious Injury in the Lab**

**Likelihood:** 1 - Low

**Impact Level:** 2 - Medium

**Risk Score:** 2 - Minor

### **Impact on Team:**

- A student or mentor is injured
- Parents and Administration start to question safety of the lab
- Possible ban on machine tool usage or other potentially dangerous work in the school lab.

### **Action:**

- Have all members go through training before using any tool they are unfamiliar with.
- Update and review safety manual regularly and distribute it to the team.
- Have a safety captain that is responsible for making sure tools are in working and safe condition to reduce injury risk.

## **RISK: Robot Damaged or Lost During Transit**

**Likelihood:** 1 - Low

**Impact Level:** 3 - High

**Risk Score:** 3 - Minor

### **Impact on Team:**

- Could not compete in competition with out building a new machine
- Have to do major robot repair/rebuild on practice day
- Limited Practice time
- Loss or Damage of assets

### **Action:**

- Robot securely fastened in vehicle or crate
- Robot has padding around it to avoid damage
- Vehicles are operated by a safe driver and all precautions are taken to ensure safe arrival

## **RISK: Broken Machines, Broken Equipment**

**Likelihood:** 2 - Medium

**Impact Level:** 1 - Low

**Risk Score:** 2 - Minor

### **Impact on Team:**

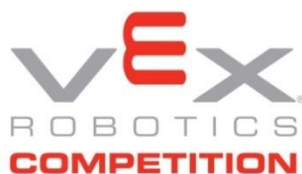
- Loss of build time
- Added expense of repair or replacement
- Possible injury risk

### **Action:**

- Maintain equipment
- Include repair and replacement costs in teams equipment budget
- Maintain relationships with other teams in the area so we can use their equipment if ours malfunctions



# *SPECTRUM* 3847



## Contact Information

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