



Team 319

Business Plan



**Prospect Mountain High School
Team 319 – Big Bad Robotics
242 Suncook Valley Road
Alton, NH 03809**

www.frc319.com

Table of Contents

Mission Statement	2
Team History	2
Awards and Accomplishments	3
Team Outreach Impact	
Alton Old Home Day Parade	5
Fisher Cats First pitch	5
FRC Teams	6
Sponsorship Appreciation Dinner	6
Rotary Presentation	6
BOB Booster Club	7
Jingle Bell Junction/Craft Fair	7
Funtown Splashtown	7
Future Plans	
Team Growth	8
Team Goals 2019:	8
Team Breakdown	9
Budget	
Revenue Sources	12
Fundraising	12
District Contributions/Grants/Sponsors	13
Expenses	
Events	15
Robot	15
Advantages of Sponsoring	16
Contact Information:	17

Mission Statement

Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

Team History

Founded in 1999 at Alton Central School, Team 319 Big Bad Bob is one of the longest standing *FIRST* Robotics teams in the nation. Throughout the years, the team has traveled to regionals as far as Texas in 2004 as well as competed in countless local events. For many years, the team remained a small effective organization led by Senior Mentor Brian Hikel. In recent years, he has been joined by other mentors from the school and community as well as by several key alumni. Concurrent with the addition of these mentors and alumni, the team has achieved success on the field and increased participation from the student body.

Some of that tremendous success has been shown by traveling to World Championships in year 2016, making it to semifinals and competing against some of the best robots in the world. Success was also seen in the 2017 season where the team won three off-season events and a Judge's Award for the very first time in team's history.

In 2018, the team won the New England District championship and was ranked #1 in New England. They also won the Engineering Inspiration award for the first time, this is the second most prestigious award in *FIRST*.



Awards and Accomplishments

Team 319 was formed in the year 1999 and has had lots of success since its founding. As a tough competitor, our team strives to achieve numerous goals each season. We work very hard on bringing out the best in ourselves and to capture the extreme success we have had in past years, whether that be from traveling to World Championships for three years straight from 2014 to 2016, or winning Gracious Professionalism Awards.

2018

- Finalist at Central New York Regional
- Engineering Inspiration Award and won at Reading District Event
- Industrial Design and won at UNH District Event - #1 Seed Captain
- Quality Award and won at New England Championship Event
- Semi-finalist at World Championship in Detroit
- Won at Battlecry off-season event
- Won at Mayhem, in Merrimack off-season event
- Quarter finalists at IRI off-season event, #2 Seed Captain
- Won at The Governor's Cup off-season, seniors got college scholarships
- Won at River Rage off-season
- Hosted Battle of the Bay 5

2017

- Judges' Award at Granite State District
- Won at Battlecry off-season event - #3 Seed Captain
- Won at Beantown Blitz off-season event
- Finalist at Summer Heat - #3 Seed
- Won at RiverRage off-season event - #2 Seed Captain
- Hosted Battle of the Bay 4

2016

- Won at Reading District Event - #1 seed Captain
- Won UNH District Event - #1 seed Captain
- Qualified for New England District Championships - #7 seed Captain
- Competed at World Championships - Semifinalists in Carson Division
- Hosted Battle of the Bay 3

2015

- Won Rockwell Innovation in Control Award at Reading District Event
- Finalist at Reading District Event
- Won Gracious Professionalism Award at UNH District Event
- Hosted Battle of the Bay 2

2014

- Won the Week Zero Event in Merrimack.
- Ranked Second seed robot in the UNH Durham Event.
- Won the Xerox Creativity Award for our unique arm mechanism.
- Invited to the New England Championship Event in Boston, Massachusetts.
- Invited to the World Championship Event in St. Louis, Missouri.
- First time hosting our off-season event Battle of the Bay

2012

- Won the Week Zero Event in Merrimack.
- Won the Innovation in Control Award Sponsored by Rockwell Automation.

2006

- Regional Finalist at the Granite State Regional Event.

2004

- Won the Leadership in Controls Award at the Lone Star Regional Event in Houston, Texas.

Team Outreach Impact:

Alton Old Home Day Parade



Each August, Team 319 shows off their current year's competition robot to the Alton Community in the annual Old Home Day Parade. The robot entertains & engages onlookers with the season's designated game pieces. In the year 2017, Bob shot fuel into totes carried by team members beside the float as it traveled down the street, giving off quite the show.

Fisher Cats First Pitch

For the past 4 years the team has hosted the New Hampshire Fisher Cats annual STEM Night. At this event, the team is able to give a demonstration of that years robot in front of thousands of baseball fans of all ages. During the 2017 off-season the team attended the game despite pouring rain and entertained fans when the game was delayed. In 2018 the robot went around collecting trash to keep the stadium clean for guests.





FLL, FRC, FTC Teams

Team 319 members mentor local FRC, FTC, and FLL teams, teaching young children basic programming, building, and designing mentalities that *FIRST* promotes. FRC, FTC, and FLL members grow to be prepared for their future STEM majors and BOB members continue to help them along the way.

Sponsorship Appreciation Dinner

Team 319 hosts an annual sponsorship appreciation dinner at their high school. During this time, team members recap the season to our sponsors with favorite memories and accomplishments throughout the season. And in addition to such, the team makes mention of the important role that the sponsors had in making it all possible.



Rotary Presentation

At this event, team 319 gives its annual business presentation to the Alton Rotary Club to give the members an inside look at what 319 has done, as well as what goals are set for the future. By doing so, it helps the Rotary to have a better understanding of *FIRST* and to promote the furthering of our existing partnership with them.

BOB Booster Club

A 501(c)3 organization of dedicated parents of students and alumni. Its main function is to develop support for the student program and raise and maintain funds for supplies or equipment that the students may need for future events/functions.



Jingle Bell Junction/Craft Fair



For two years, Team 319 has hosted the Jingle Bell Junction at the Prospect Mountain High School along with a craft fair containing 70 vendors. The event itself gives children a fun way to shop for their family members by having the option of being paired with a student volunteer to keep it a secret from their family. Children are always glad to be able to meet Santa Claus as well and tell him what they want for Christmas. The craft fair brings in many different shoppers, who will gain awareness of the robotics team and *FIRST*.

Fun Town Splash Town

For the first time in 2018 Team 319 was invited by FRC 133 BERT to take part in the first annual Maine Robotics Day hosted at FunTown SplashTown in Saco, Maine. This event drew hundreds of guests to the demo to check out *FIRST* robotics.



Future Plans

Team Growth

Our team has an annual tradition of setting goals in order to improve ourselves. This year's goals reflect a balance of competition and community. Over time, our team has grown in its technical abilities as well as its community outreach.

Team Goals 2019:

- Build a competitive robot.
- Compete at Week Zero Preseason Event.
- Compete at Hatboro-Horsham District Event.
- Compete at Southern NH District Event.
- Compete at UNH District Event.
- Compete at District Championships.
- Compete at World Championships in Detroit, Michigan.
- Win the Chairman's Award, Gracious Professionalism Award, and Spirit Award.
- Compete in postseason events such as Battlecry, Beantown Blitz, Mayhem in Merrimack, Summer Heat, and RiverRage.
- Host Battle of the Bay, our own off season event.
- Continue to recruit and train new members to make up for the students that graduate high school.
- Mentor *FIRST* Lego League, *FIRST* Tech Challenge, and *FIRST* Robotic Competition Team.
- Become a team that is resourceful and helpful to the *FIRST* community.
- Become one of the leaders in the Lakes Region for all aspects of *FIRST*.
- To have noticeable presence in our community giving back to those who support us.
- To be good ambassadors for the values of *FIRST*.
- Portray gracious professionalism
- Be actively searching for new sponsors

Team Breakdown

➤ Mentors

- Our Mentors have over 40 years of direct experience with *FIRST* robotics as well as 10+ years in Mechanical engineering employment and 30+ years of teaching experience. A dedicated team that works well together to continuously improve technically as well as continuously support 319's students to become the best people they can be.
 - Lead - Brian Hikel
 - Programming - Joe Derrick
 - Mechanical - Ty Tremblay & Michael Kelley
 - Business/Awards - Michelle Kelley
 - Business/Social Media - Melissa Catauro
 - CAD - Ty Tremblay

➤ Software Team

- This team brings the robot to life. Every action the robot completes, whether being driven by a human or autonomously, is programmed by this team.

➤ Mechanical Team

- The tangible work done of the team: welding, cutting, bending, etc. This team turns the design team's' vision into reality.
- The Mechanical subteam is further broken into two groups: design and fabrication. The design subteam uses CAD software to design the drivetrain and other mechanisms on the robot, as well as make part drawings for the Fabrication team to use. The Fabrication subteam uses part drawings and industrial machines such as mills and lathes to create parts for the robot. Both the Design and Fabrication teams contribute to the assembly of the robot.
- Mechanical also develops design solutions based on game strategy, converts sketches to solid models, assembly models to working drawings, and fabricates parts. They also assist in the assembly and troubleshooting of the robot, as well as creates parts list and pricing.

➤ CAD Team

- The CAD Team is responsible for designing the robot in a virtual environment, choices for gear ratios and motor types as well as the mechanical structure of the robot. From the release of the event, brainstorm of the best possible way to run the robot while working hand in hand with the mechanical teams and software teams to create a functioning machine.

➤ Business Team

- Creates a business plan and controls all team finances. This team works with the school and the communities planning events, such as the first pitch at the Fisher Cats game and Alton Home Day Parade. The team reaches out to local and small business and parents, trying to get money in order to supply the team with all its needs. The team works to get large businesses to partner with BOB so that their name is spread and the team is better supplied.

➤ Media

- The media team works hard through several different social media pages to keep our community members updated on upcoming and ongoing events that the team will be completing. It is a useful outlet for showing the team's gratitude for generous sponsors, successes at competitions, and team moments.

➤ Chairmans

- This team coordinates our Chairman's essay, which summarizes and describes all of the things that the team has accomplished. Along with creating a theme and writing an essay, the team also has to coordinate a presentation and video with the essay. At competitions three students present a seven minute long speech to a panel of judges.
- Winning the Chairman's Award/Hall of Fame Award is the most prestigious award of *FIRST* competition. The award is given to the 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 of service to the community of *FIRST*. To win this award the team must demonstrate all aspects of their team by the creation of a Hall of Fame submission in the form of a written submission and/or video. There are very specific criteria for this submission as well as a specific date of submission.

➤ Electrical

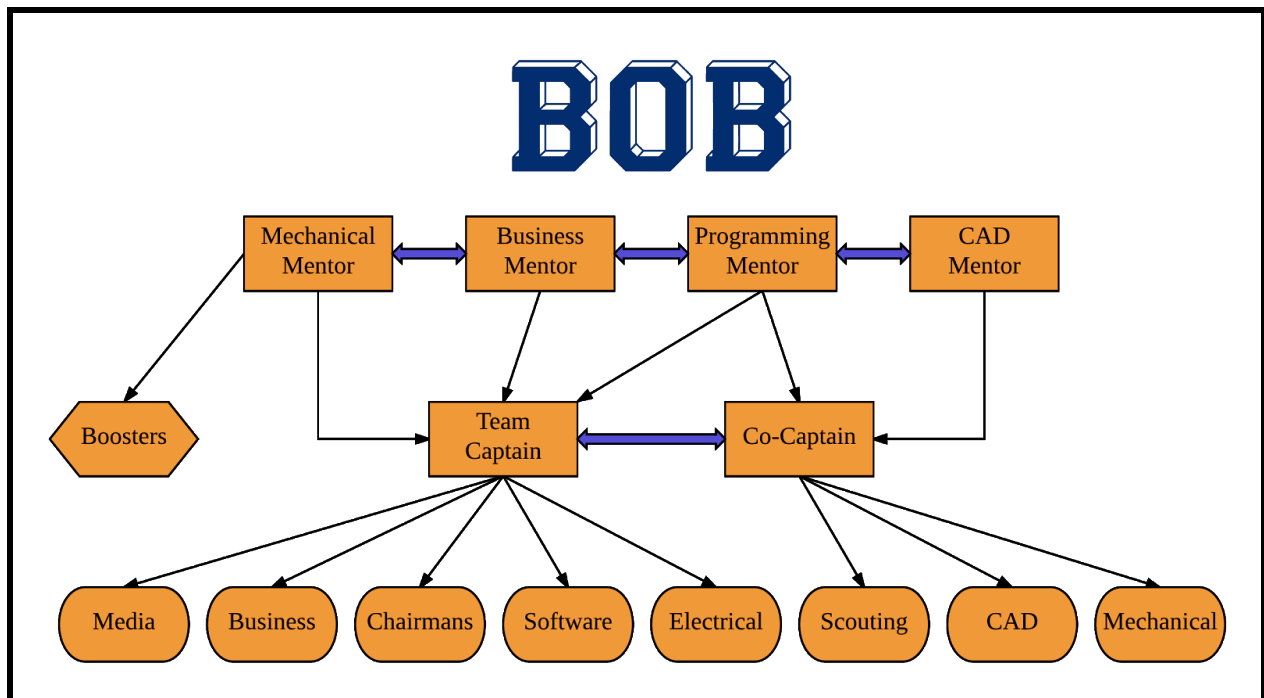
- This team is responsible for the electrical systems of the robot build. Skills include wiring diagrams, connectors and general electrical practices. They also take care of battery management.
- The Electrical subteam wires the robot and creates any pneumatic systems needed. They take the mechanical systems designs and fabrications and make them controllable.

➤ Scouting

- This team evaluates other robots in the competition to see who will work well with us in an alliance. Data is collected for each match and compiled in order to better inform our decision making process.

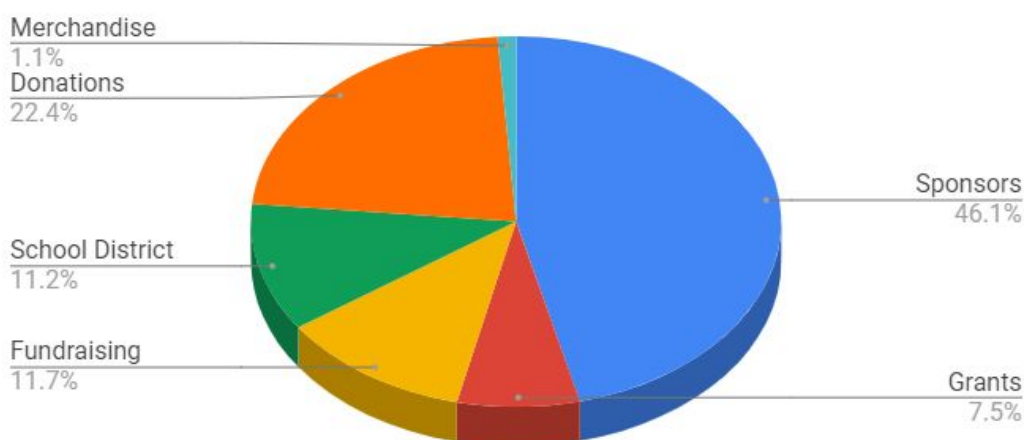
➤ Booster Club

- Parents of team members/alumni or community members who plan and execute fundraisers for the team. A 501c3 charitable organization that holds regular meetings and has elected officials including president, treasurer and secretary.



Revenue Sources

Team Revenue



Fundraising

Every year, sponsors are incredibly generous with donations to the team for the build and competition season. In most of the off season and sometimes during the regular season, the team holds fundraising events and goes to fundraising opportunities to help increase revenue. All of the fundraising was organized, planned, directed, and completed by the students on the team.

Silent Auction		
The Silent Auction is an event that started May of 2018. This event is one that entails members of the communities of Barnstead and Alton coming to the school to look at a series of items, ranging from skin care to even school supplies. This event was conducted by the partnership between team 319, the Future Business Leaders of America, as well as the Prospect Mountain High School Music Department. And the goal is to raise money for upcoming events and expenses.		
2018 Revenue		\$583

Craft Fair/Jingle Bell Junction		
The team provided an opportunity for students in the local elementary schools to purchase gifts for family members for the holiday, as well as having their faces painted. Booth spaces were rented out to local crafters and vendors to sell their items.		
2018 Revenue		\$4,853

Battle Of the Bay	
Battle Of the Bay is an off-season competition held at Prospect Mountain High School and sponsored by Profile Bank. It serves as the final competition in northern New England before the next season begins. This past fall, the fifth annual event drew 24 teams from Maine, New Hampshire, and Massachusetts as well as over 1,500 spectators and team members. This event is both a fundraiser as well as a community event, allowing the team to showcase the robot as well as the ideals of <i>FIRST</i> Robotics.	
2018 Revenue	\$7,640

District Contributions

School Contributions	
The PMHS school district contributes money each year to help fund the program in the school budget. These funds are directed at registration only.	
2018 Revenue	\$13,000

Grants

DODStem (National Defense Educator Program)	
We applied and received a grant from the Defense Department to be applied for FRC registration. Mentor - Mike Schrider 319- Alumni - Engineer Portsmouth Naval Shipyard	
2018 Revenue	\$2,500

Sponsors

Symbotic			
www.symbotic.com - 5 year relationship. A robotics company that designs warehouse solutions. One of our key mentors, Ty Tremblay, is an employee at Symbotic.			
2018	\$8,000	2019	\$5,000

SPS New England			
www.spsnewengland.com - 3 year relationship. New England's Award-winning Team of Bridge, Highway, Transit and Marine Construction Experts.			
2018	\$5,000	2019	\$5,000

Podmore Manufacturing			
www.podmoremfg.com - Since 1982, our employee-owned Escomatic & CNC Swiss screw machining shop has built a reputation of exceptional quality, state-of-the-art technology, and a commitment to excellence in Escomatic & CNC Swiss Screw Machining			
2017	\$5000	2019	TBD

Schneider Electric			
www.schneider-electric.us/en/ -Schneider Electric is leading the Digital Transformation of Energy Management and Automation in Homes, Buildings, Data Centers, Infrastructure and Industries. 2nd year relationship.			
		2019	\$5,000

Safran - Optics 1			
www.optics1.com - 2 year relationship. A full-spectrum electro-optics company dedicated to developing, producing, and delivering innovative technologies with unmatched performance.			
2018	\$1,500	2019	TBD

Alton Rotary			
www.altonrotary.org - 8 year relationship. Rotary is a non-political and nonprofit service organization of men and women dedicated to service above self. Its objective is to save and improve lives both locally and globally by raising funds and the members contributing their time and talent to build a more just and peaceful world.			
2018	\$1,000	2019	\$1,000

Expenses (2019 Forecast)

Event	Registration	Travel	Room and Board	Cost
Week Zero	\$150.00	600.00	-	\$750.00
Week One - TBD	\$4,000.00	\$1200.00	\$4,000.00	\$9,200.00
UNH District Event	\$2,500.00	\$900.00	-	\$3,400.00
Southern NH District Event	\$2,500.00	\$900.00	-	\$3,400.00
NE Championships	\$4,000.00	\$1,800.00	\$2,000.00	\$7,800.00
World Championship	\$5,000.00	\$5,200.00	\$11,000.00	\$21,200.00
BattleCry @ WPI	\$400.00	\$350.00	\$600.00	\$1,350.00
IRI	\$850.00	\$1,700.00	\$2,200.00	\$4,750.00
River Rage	\$250.00	\$600.00	-	\$850.00
Mayhem in Merrimack	\$225.00	\$600.00	-	\$825.00
Governor's Cup	\$0.00	\$600.00	-	\$600.00
				\$54,125.00
				Approximate Robot Expenses \$14,000.00
				TOTAL \$68,125.00

Robot

Items	Supplier:	Cost
Parts		
Gearbox, gear, bearing mount, shaft collar, chassis	Vex Robotics	\$640.14
Roller kits	Competition Robot Parts	\$305.95
Timing belts	Stock Drive Products	\$286.30
Chassis	AndyMark	\$559.00
Air cylinders, bearings, shoulder bolts	McMaster-Carr	\$682.37
Control system	Andy Mark/Cross the Road Electronics	\$5,900.00
Computer	TBD	\$1,500.00
Tools	TBD	\$1,000.00
BOB Transportation	TBD	\$1,800.00
Etc.	TBD	\$1,000.00
Total		\$13,655.76

Estimated need for 2019: \$68,125

Advantages of Sponsoring

We welcome your sponsorship! In order to allow an acceptable donation for your business we recommend one of the following sponsorship levels:

Levels of Sponsorship:

Premiere Level: \$10,000

- Largest Logo/Title in Color on Robot
- Name on Banner in the Pit
- Business logo on event shirt
- Business logo and link to website on BOB 319 website
- Inclusion in all Press Releases
- Monthly promotion through social media channels
- Recognition at Competitive Events

Platinum Level: \$5,000 +

- Prominently placed Logo/Title in Color on Robot
- Recognition at Competitive Events
- Included on Banner in the Pit
- Business logo on event shirt
- Business logo and link to website on BOB 319 website

Diamond Level: \$3,000 - \$4,999

- Business Name Robot
- Included on Banner in the Pit
- Business logo on event shirt
- Business logo and link to website on BOB 319 website

Gold Level: \$1,000 - \$2,999

- Business Name on Robot
- Business logo on event shirt
- Business logo and link to website on BOB 319 website.

BOB Fan Club: \$1.00-\$999.99

Contact Information:

Unless otherwise specified please direct all inquiries to our Lead Mentor:

Role	Name	Email	Phone
Lead Mentor	Brian Hikel	bhikel@pmhschool.com	603-520-4781
Programming Mentor	Joe Derrick	jderrick@pmhschool.com	603-875-3800 x2122
Mechanical Mentor	Ty Tremblay	ty.tremblay@gmail.com	603-892-2077
Business Mentor	Michelle Kelley	mkelley@pmhschoo.com	-
School Principal	J Fitzpatrick	jfitzpatrick@pmhschool.com	603-875-3139
District Superintendent	Robert Cullison	rcullison@pmhschool.com	603-875-3158

Checks Payable:
PMHS Team 319 Boosters Inc.

Team Mailing Address:
Prospect Mountain High School
242 Suncook Valley Road
Alton, NH 03809