



BOB 319

Business Plan



**Prospect Mountain High School
Alton, NH**

(revised 11/2022)

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EXECUTIVE SUMMARY

Mission Statement:

Our mission at FRC 319 is to openly share resources with ingenuity, originality, and resourcefulness while encouraging the personal growth of our students and their ability to recognize and be proud of their incredible capabilities.

Program Summary:

FIRST was founded in 1989 to inspire young people's interest and participation in science and technology. FIRST designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills.

The mission of FIRST 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.

-FIRST® website (www.firstinspires.org)

Relationships & Information Regarding Current Sponsors:

Our sponsors contribute their thoughts and ideas, so that we can learn from their expertise. Each June we host an appreciation dinner where our sponsors can drive our robot, hear about our season, and meet the students that they help with their donations.

Summary of Future Team Plans:

In addition to participating in various community service projects year round, team 319 plans to continue its pursuit to further FIRST globally. To assist in expanding our outreach efforts, we are always looking to acquire larger corporate sponsorship and additional business corporation-funded grants, and have the experience, formula, and ability to do so with considerable success.

TEAM OVERVIEW

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. We have remained an effective organization led by Lead Mentor, Brian Hikel, and other mentors and recently returned alumni from the school's community.

An example of our tremendous success has been shown by traveling to World Championships in 2016. There, the team competed against some of the best robots in the world and made it to the semifinals. The team also won a Judge's Award for the very first time in 2017.

Unremitting our three year streak, FRC 319 won the New England District Championship in 2018 and was ranked #1 in New England. This was also the year they brought home the second most prestigious award in FIRST, the Engineering Inspiration award.

Student Team Members:

The students of FRC 319 represent a number of diverse backgrounds with students coming from two different towns: Alton and (Center) Barnstead, NH. This has brought together students from different communities and creates a melting pot of ethnicities, ages, genders, talents, interests, and geographical locations. Through FIRST, these students learn to work together as a single team, despite their differences. Many students participate in more than one sub team. We have had much success in students enrolling in STEM majors in post secondary education.

Team Mentors:

Our mentors have over 25 years of direct experience with FIRST robotics as well as 10+ years in mechanical engineering employment and 30+ years of teaching experience. They are a dedicated team that work well together to continuously support 319's students.

Brian Hikel	1999 - present Mechanical & Strategy
Michelle Kelley	2013 - present Awards, Business, & Media
Michael Kelley	2013 - present Mechanical
Alexandra Berry	Student: 2015-2018, Mentor 2018 - present Scouting & Strategy
Melissa Catauro	2018 - present Business, Website, & Fundraising
Eric Mercer	Student: 2013-2015, Mentor 2020 - present Programming

Team Sponsors:

SPS New England	New England's award-winning team of bridge, highway, transit and marine construction experts.
DoD STEM	U.S. Department of Defense (DoD) STEM professionals work at the leading edge of our nation's most advanced technological breakthroughs. DoD STEM supports a wide variety of activities including after-school programs, competitions, and internships for students and professional development and training for educators.
Schneider Electric	Schneider Electric is leading the digital transformation of energy management and automation in homes, buildings, data centers, infrastructure and industries.
Alton Centennial Rotary Club	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.
Profile Bank	Profile Bank dedicates itself to serving the needs of our surrounding communities. They offer a broad range of financial products and services while providing each customer with the highest level of personal service.

TEAM STRUCTURE

Team Membership:

Membership on FRC 319 is a year-round commitment. The team strives to prepare all new team members and parents of the obligations required of members. A new team member meeting is held after the start of school each year followed by a new parent informational meeting. There are currently 14 members on the team.

Team 319 has a strong reputation in the *FIRST* community because of the identity we cultivate. As members of team 319, it is our responsibility to remember and maintain these values. We are:

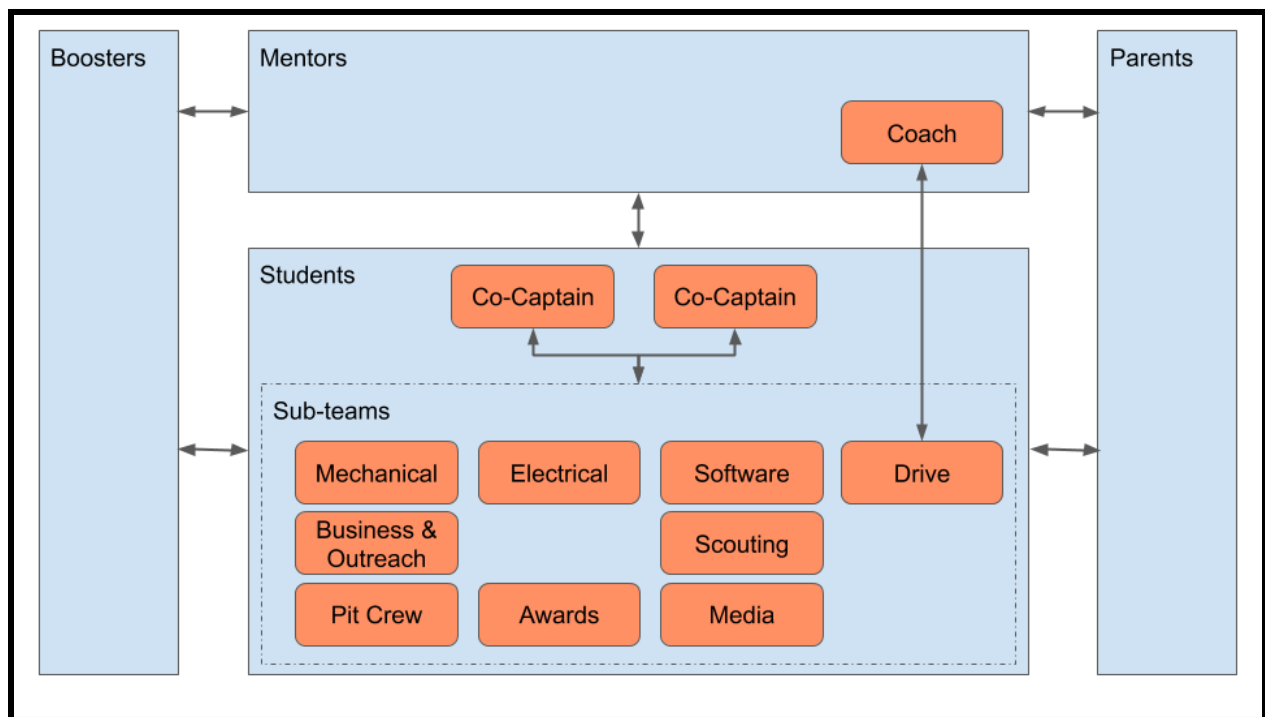
- *Friendly* - At all times, we are a team that is friendly. This includes other students and faculty at PMHS, other teams, event staff and volunteers, and other 319 members.
- *Involved* - 319 members are active on the team, and within the local *FIRST* community, Alton and Barnstead community, and the greater *FIRST* community.
- *Competitive* - 319 always strives for excellence on the field as much as off the field. FRC is a competitive sport, and winning feels good.
- *Open* - While we like to win, we recognize that *FIRST* has a larger purpose of Inspiration. Because of this, our robot and process is not kept secret. In fact, we actively share our team's resources within the *FIRST* community.

Team Management:

There are three major groups that make up team 319; **students, mentors, and parents**. Students are the core of the team, and are the only team members that can drive the robot during competition. Mentors help facilitate and guide student activities within the team, as well as guiding the different sub teams throughout the year. Parents provide a crucial base of support throughout the year by helping staff events, providing food during meetings, and attending meetings as mentors.

Team 319 is organized into sub teams, which are described below. Each sub team has a lead student that is chosen by the sub team. Separate from the sub teams are two elected team co-captains. Mentors all play an equal part within the team, and advise the subteams. One mentor also has the role of coach, and coaches the drive team during competitions.

Team 319 is supported by a Booster Club, which handles team 319's financials, long term planning, and asset management.



Software Team

The software team is the group that is responsible for converting the rules of the game and the abilities of the robot into a game-winning strategy. The group has to take human rules, strategies, and ideas and convert them into a form that the robot can understand. Software works with every technical group to ensure that their requirements are implemented in the finished robot.

Mechanical Team

The mechanical team turns the design team's vision into reality by doing the more tangible work such as welding and cutting. Mechanical develops design solutions based on game strategy, converts sketches to solid models, assembly models to working drawings, and fabricates parts; and assists in the assembly and troubleshooting, and estimating the prices of parts needed to complete the build. This team is broken into two groups: design and fabrication.

- The **Design sub team** uses CAD software to design the drivetrain and other mechanisms on the robot, and create drawings for the Fabrication team.
- The **Fabrication sub team** 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.

CAD Team

The CAD Team is responsible for designing the robot in a virtual environment. Brainstorming the mechanical structure of the robot. The CAD team analyzes the best possible way to run the robot while working hand in hand with the other teams to create a one functioning body.

Business & Awards Team

Creates and maintains the business plan. This team coordinates our chairman's essay, which summarizes, describes, and speaks to the value of everything that the team has accomplished and they are in charge of writing the Woodie Flowers award, which credits an inspirational mentor on the team.

Media and Websites

The media team works hard through several social media pages to keep our community members updated on upcoming and ongoing events that the team will be completing. It's a useful outlet for showing the team's gratitude for generous sponsors, successes at competitions, and our growth as a team. The website group focuses on spreading the word of our team and *FIRST* by showing what we do by maintaining the website.

Electrical

This team is responsible for the electrical systems of the robot build. They use skills like wiring diagrams, and connectors, as well as practicing and expanding on their general electric practices. They wire the robot, take care of battery management, and create any pneumatic systems needed. They also take the mechanical systems designs and fabrications and make them controllable.

Scouting & Strategy

The scouting and strategy group is mainly in charge of the team's data. During the team's competitions, this sub team is responsible for recording every match's data. This includes filling out match data on the scouting tables for the drive team (so they can prepare for upcoming matches). The scouting sub team is in charge of coming up with a game winning strategy and introducing it to the team. With this system everyone can be included before competitions and during the build season.

PMHS Team 319 Booster Club

The PMHS Team 319 Booster Club is a 501(c)3 organization of dedicated parents of team members, alumni, or community members. Their overall goal is to develop support for the student program, raise/maintain funds for supplies and equipment, and help with various fundraisers and events. The organization holds regular meetings and has elected officials including president, vice president, treasurer, and secretary.

STRATEGIC PLANNING PROCESS/SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none"> ● Returning sponsors year after year ● Well established fundraisers ● History of success and pride in work ● Booster Club to raise funds and handle money ● Supportive mentors ● Scholarship program to support graduates of 319 in college ● Social media presence and website ● Use of online technology ● Gracious Professionalism 	<ul style="list-style-type: none"> ● Keeping student interest during pre-season ● Acquiring new sponsors ● Limited workspace
Opportunities	Threats
<ul style="list-style-type: none"> ● Continue to grow the team ● Outreach and mentoring FRC, FTC, & FLL (develops future BOB members and interest in STEM) ● Engage existing sponsors in new ways ● Connections to promote new sponsorships ● Create and execute a summer enrichment program for incoming and returning students. 	<ul style="list-style-type: none"> ● Booster membership has not grown significantly <ul style="list-style-type: none"> ○ <i>Solution:</i> Using individual skills of the booster parent's where needed such as team feeds, building skills, or monetary and/or material donations. ● Needing additional mentors as team population increases <ul style="list-style-type: none"> ○ <i>Solution:</i> Encourage sponsors and local businesses (ie: machine shop) to come into the shop to give feedback and advice during the build season. ● Student membership declining <ul style="list-style-type: none"> ○ <i>Solution:</i> Mentors will develop engineering and design courses and individual studies that are project based for the school curriculum targeted at freshman students.

TEAM IMPACT/OUTREACH

We keep the community updated through our social media channels, website, newspaper articles, and town community pages on Facebook. Our team is positively viewed by the community in fun and engaging outreach events such as our off season event Battle Of the Bay and our annual Craft and Vendor Fair.

Working with the team sponsors helps to build our brand to further heights. We maintain relationships with our sponsors through our social media channels with monthly shout-outs, collaboration with design concepts, and hosting an annual sponsorship dinner.

The team builds the brand of 319 primarily through merchandise. Our merchandise is sought after by not only local community members and teams, but across the world.

STEM Night at the NH Fishercats	Traditionally, the team has hosted the New Hampshire Fisher Cats annual STEM Night. At this event, we gave a demonstration of that year's robot in front of thousands of baseball fans of all ages. In 2017, the team entertained fans during a delay in the game due to pouring rain. In 2018, we were able to send the robot to collect trash to keep the stadium clean.
Alton Old Home Day Parade	When given the chance, 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.
FLL, FTC, FRC Mentoring	Team 319 prides themselves in their abilities to mentor local FRC, FTC, and FLL teams. This contributes to teaching young children basic programming, building, and designing mentalities that FIRST promotes. It also helps these team's members expand their mindset, and grow to be prepared for their future in STEM while BOB members help them along the way.
Maine Robotics Day	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 as well as allowing team members to meet other STEM focused teens from outside communities.

FUTURE PLANS

We have an annual tradition of setting, revising, and personalizing goals in order to improve as a team. In order for continuous progress to happen, these standards must also be set when it comes to making goals. Over time, our team has grown in its technical abilities as well as its community outreach, but we always want to make an effort to grow when possible. Our current aspirations are as follows:

- Build a unique and well thought out robot using strengths from each member of the team.
- Compete at designated competitions both within the season and during post season
- Expand on our abilities to portray Gracious Professionalism and Spirit
- Continue to recruit and train new members to grow our team.
- Mentor *FIRST* Lego League, *FIRST* Tech Challenge, and *FIRST* Robotic Competition Team.
- Expand our team's resourcefulness and willingness to be helpful to our community and the *FIRST* community.
- Become one of the leaders in the Lakes Region for all aspects of *FIRST*.
- To have a noticeable presence in our community by giving back to those who support us.
- To be good ambassadors for the values of *FIRST*.
- Actively search for new sponsors and those willing to support the 319 team
- Support teammates with their overall physical and mental health.
- Provide for the easy transition of senior students to mentors.
- Mentor potential team members for sub team leads to ensure adequate succession planning.
- Formalize recruitment and extend the induction framework for new/prospective team members.

ACTION/IMPLEMENTATION PLAN

Strategy	Actions	Group Responsible	Planned Completion
Provide for the easy transition of senior students to mentors	Develop and implement a “junior Mentor” program in the team structure	Executive	On going
Mentor potential team members for sub team leads to ensure adequate succession planning	Identify and mentor potential leaders within sub teams	Student Leadership Council, sub team Leads	On going
Formalize recruitment and extend induction framework for new/prospective team members	Formalize recruitment strategies	Whole team	On going

TEAM BUDGET

2022-2023 Fiscal Year Forecasted Income

Battle Of the Bay (BOtB)	\$9,400.00
Craft & Vendor Fair	\$3,500.00
Sponsorships	\$13,750.00
Grants	\$6,000.00
School Contribution	\$6,000.00
Total Forecasted Income	\$38,650.00

2022 Forecasted Expenditures

Event Registrations (Districts x2, New England Championship, World Championship, Offseason x4)	\$15,000.00
Competition Costs (Transportation, Lodging, Gas)	\$27,400.00
Robot Supplies	\$5,000.00
Admin Expenses (Scholarship, Insurance, Promotional, Outreach, Fundraising)	\$11,269.00
Technology Equipment	\$1,000.00
Total Forecasted Expenses	\$59,669.00

SPONSOR BENEFITS

Sponsorship Levels	Level Benefits <i>(Each level includes the benefits of the previous level)</i>
BOB Fan Club: \$1.00-\$499.99	
Gold Level: \$500 - \$2,999	<ul style="list-style-type: none"> • Business name on robot • Business logo on event shirt • Business logo and link to website on BOB 319 website.
Diamond Level: \$3,000 - \$4,999	<ul style="list-style-type: none"> • Included on banner in the pit
Platinum Level: \$5,000 - \$9,999	<ul style="list-style-type: none"> • Prominently placed logo/title in color on robot • Recognition at competitive events
Premiere Level: \$10,000	<ul style="list-style-type: none"> • Largest logo/title in color on robot • Inclusion in all press releases • Monthly promotion through social media channels

TEAM FUNDRAISING OPPORTUNITIES

Current Team Fundraisers:

Battle Of the Bay

Battle of the Bay is an off season competition held at Prospect Mountain High School and is sponsored by Profile Bank. It serves as the final competition in Northern New England before the next season begins. This past fall, the event drew over 30 teams from Maine, New Hampshire, Vermont, and Massachusetts as well as over 1,000 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 FIRST Robotics.

2022 Revenue: \$9,400.00

Annual Craft & Vendor Fair

The annual craft and vendor fair has been held at Prospect Mountain High for the past 5 years (skipped 1 year due to the pandemic.) Over 60 crafters and vendors from Maine, NH & Massachusetts participate at the fair. We raise funds from selling booth spaces, raffling off donations, and concessions.

2021 Revenue: \$3,262.00

Sock Fundraiser

Due to the pandemic in 2020, we found a creative way to host a contactless fundraiser with our local FBLA team. For every 3 pairs of socks bought, 1 pair was donated locally (socks are the most needed clothing item, but least requested.) This fundraiser was managed through an app and products bought were shipped directly to the customer.

2020 Revenue: \$760.00

Merchandise Sales

We offer clothing and a variety of miscellaneous products with our brand logo for sale. Merchandise sales are ongoing through the year with our largest event, Battle Of the Bay, bringing in the most sales.

Future Team Fundraisers:

Name	Description	How do we plan to advertise?	Materials Needed	Estimated Income (Income-Expenses)
Valentine's Day Candy Grams	Sell candy grams during lunch period to students and staff to be delivered for Valentine's Day	Internally with Posters, announcements, and tv screen slideshows.	Candy, packaging, order forms	\$1,350-\$450 (supplies) = \$900 estimated income
Mattress Fundraiser (in conjunction with Prospect Mountain FBLA club)	Custom Fundraising Solutions takes a creative approach to raising money, through mattress sales and more!	Social Media, Newspapers,	Materials are provided by CFS	\$1,000-\$3,000 estimated income

WHY IS OUR TEAM UNIQUE?

Team 319 is an open team. We do not keep our robot designs, software, or other procedures secret from other teams. We actively share our team's resources within the FIRST community because we recognize that the larger purpose of FIRST is Inspiration. Each season, 319 releases our CAD live online and actively answers any questions that other teams may ask. We also publicly share our software, and strive to help any team wishing to use parts of it.

Actively sharing our resources has resulted in collaborations between 319 and the greater FRC community. In 2018, FRC 3847, from Houston, Texas, shared their collector concept with us, and we worked with them to make one of the most successful gripper designs of that year. In 2019, several teams liked the design of our elevator bearing blocks and implemented them on their own robot. Through this, we were able to learn from their experiences and make our designs better. Sharing our code has helped many teams implement features they weren't originally capable of before, allowing them to be more successful on the field.

Being an open team since 2017 has helped FRC 319 become a better team, has improved our robot's performance during the season, and has helped other teams become more successful. What it has *not* done, however, is limit FRC 319's competitiveness in any way. Team 319 firmly believes that its open concept is one of the keys to its success.

ACHIEVEMENTS

Our team prides itself not only on creating new goals, but on the achievements of ones from years past.

2022	
2021	<ul style="list-style-type: none"> ➤ Game Design Challenge participant (The Game Design Challenge was an opportunity for teams to design a FIRST Robotics Competition game and compete against other teams for a chance to pitch their game to the FIRST Robotics Competition Game Design Team.) <p><i>(virtual season due to pandemic)</i></p>
2020	<ul style="list-style-type: none"> ➤ Ranked 14th and semi-finalists at Granite State District. <p><i>(shortened season due to pandemic)</i></p>
2019	<ul style="list-style-type: none"> ➤ Ranked 7th in New England district earning 288 points ➤ Awarded gracious professionalism award at River Rage 2019 ➤ Our record for 2019 was 92-35-3 ➤ Ranked 6th at UNH NE district event ➤ Won Innovation in Control Award sponsored by Rockwell Automation at New England District Championship 2019 ➤ Won Excellence in Engineering Award sponsored by Delphi at Daly Division World Championship in Detroit
2018	<ul style="list-style-type: none"> ➤ Finalist at Central New York Regional ➤ Engineering Inspiration Award and won at Reading district event ➤ Industrial Design and won at UNH district event - #1 alliance captain ➤ Quality Award and won at New England Championship ➤ 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 alliance captain ➤ Won at The Governor's Cup off season, seniors got college scholarships ➤ Won at River Rage off season
2017	<ul style="list-style-type: none"> ➤ Won at Beantown Blitz off season event ➤ Finalist at Summer Heat - #3 Seed ➤ Won at RiverRage off season event - #2 alliance captain ➤ Judges' Award at Granite State district ➤ Won at Battlecry off season event - #3 alliance captain
2016	<ul style="list-style-type: none"> ➤ Won at Reading District Event - #1 alliance captain ➤ Won UNH District Event - #1 alliance captain ➤ Qualified for New England District Championships - #7 alliance captain ➤ Competed at World Championships - semi-finalist in Carson Division

TEAM CONTACT INFORMATION

Website	http://www.frc319.com
Team Email	BigBadBob319@gmail.com
Facebook	https://www.facebook.com/319BigBadBob
Twitter	https://twitter.com/FRC319
YouTube	https://www.youtube.com/user/BigBadBob319
The Blue Alliance	https://www.thebluealliance.com/team/319

Main Contacts:

Lead Mentor: Brian Hikel
Email: BHikel@pmhschool.com
Phone: 603-875-3800

Sponsorship Information:

Checks should be made payable to: PMHS Team 319 Booster Club
Donations may be tax deductible; a receipt with our tax id # will be sent upon receipt from our treasurer.

Mailing Address:

PMHS Team 319 Booster Club
Attn: Brian Hikel
242 Suncook Valley Road
Alton, NH 03809

Thank you for your support!!