Business Plan
Sept 2019- Jun 2020

Presented by: Friends of BizarBots Robotics

Our Origin:

The Bizarbots, team 5494, were founded in October 2013 by Richard Monteith, the head of the science department at Holbrook Junior Senior High School. He initiated the team with his son, Kevin Monteith. Their goal was to advance STEM (Science Technology Engineering Mathematics) in Holbrook and get students interested in engineering. The team was originally composed of about 10 members with Kevin as the only mentor. Within the past three years, the team has expanded to 45 members and 8 mentors.

The Bizarbots are part of a larger organization called FIRST Robotics (For Inspiration and Recognition of Science and Technology). The mission of FIRST is to inspire young people to be leaders in science and technology by engaging them in mentor-based programs that build science, engineering, and technology skills, while also building self-esteem, life skills, and community awareness.

Our Mission Statement:

Our mission is to inspire young people to be science and technology pioneers by engaging them in community projects and mentor-based programs that build science, math, engineering, and technology skills and foster self-confidence, communication, and leadership.

Through the program, students are able to:

- Apply engineering principles to the design, build, and operation of robots for competitions
- Learn to use CAD (computer-aided design) and other engineering software
- Obtain hands-on experience with multi-disciplinary collaborative problem solving
- Program robots for both autonomous and human operated modes
- Travel to competitions
- Volunteer in their community
- Network with industry and engineering firms and companies
- Collaborate with students and mentors from other robotics teams across the nation

Team Organization:

30 students
4 mentors
2 coaches
1 teacher

FIRST FRC ROBOTICS COMPETITION (FRC)

FIRST (For Inspiration and Recognition of Science and Technology) is a nonprofit organization whose goals are to introduce students to the world of STEM (science, technology, engineering, and math). Some of the world's leading technology companies support this organization: GM, Motorola, Google, Chrysler, Johnson & Johnson, NASA, Boeing, National Instruments, FedEx, Boston Dynamics and Xerox to name a few.

The FIRST FRC Robotics Competition is the varsity level competition within the FIRST organization. FRC unites high school students with engineering and technology mentors in a global competition of over 2,500 teams. The competition begins on the first Saturday in January, when the game rules are released to the teams. The robots compete in challenges that change every year. From ball shooting to hanging game pieces on a grid, the games differ dramatically with each season. After the rules are released, teams have just six short weeks to design and build a robot to play the given game. The teams compete at regional events across the country, and the best of the best move on to the world championship event held in April of each year.

FRC is built on the principles of Gracious Professionalism and cooperation. These ideals provide an ethic that is unique amongst most teams and clubs. FRC teams do not just strive to win each event they compete in; 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. Older FRC teams mentor younger ones to collectively .develop 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 these teams have to make a successful product (the robot) but in most cases 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.

VEX ROBOTICS COMPETITION (VRC)

The VEX Robotics Design System, developed by Innovation FIRST Inc., is a construction system based in Texas. It is the modern-day "Erector Set." It allows students to gain engineering knowledge through hands-on development of robotic systems.

The VEX Robotics Competition is managed by The Robotics Education and Competition Foundation, has over 4,800 teams from 20 countries in 300 tournaments each year. Small groups of students design and construct robots, while also building a foundation in engineering, math, and science.

Travel costs to the regional VEX Competition are minimal due to many being held in Worcester.

A smaller challenge than the FIRST Robotics Competition, Bizarbots uses VRC to introduce students and new schools to competitive robotics. VRC's smaller size allows students to recreate robot designs until finding optimal solutions to game challenges. Through VRC participation, Bizarbots hopes to teach younger students and support the growth of educational robotics programs at more schools within its community.

Community Outreach

The Bizarbots Robotics Team is committed to helping both our local and international community, which is why every member of our team is required to complete at least 10 hours of community service. Students volunteer at a variety of events from cleanups to blood drives in order to give back to the community. So far this year the team has participated in a local food drive and done a Halloween fundraiser for the UNICEF emergency and disaster relief fund.

We have also partnered with the Enabling the Future foundation which is an amazing group of individuals from all over the world who are using their 3D printers to create free 3D printed hands and arms for those in need of an upper limb assistive device.

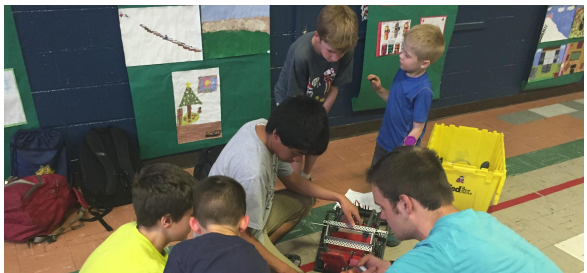
They are people who have put aside their political, religious, cultural and personal differences – to come together and collaborate on ways to help improve the open source 3D printable designs for hands and arms for those who were born missing fingers or who have lost them due to war, disease or natural disaster.

The e-NABLE Community is made up of teachers, students, engineers, scientists, medical professionals, tinkerers, designers, parents, children, scout troops, artists, philanthropists, dreamers, coders, makers and everyday people who just want to make a difference and help to "Give The World A Helping Hand."

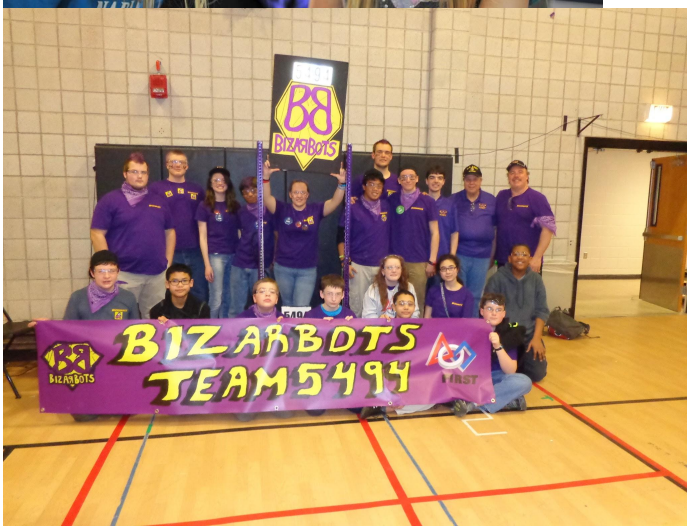
Program Goals

Short Term Goals:

- Cultivate the abilities and character of all team members



- Compete for awards at competitions such as the Chairman, Creative, and Engineering Inspiration Awards.
- Begin and mentor engineering teams
- Host and volunteer at robotics tournaments and events
- Get more mentors to teach various skills to the students



Long Term Goals:

- Gain recognition for STEM
- Support the growth of educational robotics and STEM programs
- Strengthen our local community through volunteer outreach
- Inspire people to be exceptional
- Expand robotics within the community
- Gain multiple Sponsors Influences other fields besides STEM graphic Design, Writing, Business Skills, Logistics, and Media.
- Advertise our team and a consistent logo through online merchandise stores, our local newspaper, and active platforms, which will be ran by designated students
- Recruit new mentors by exposing Bizarbots Robotics to the high school and middle school, and reaching out to sponsors and parents
- Acquire new team members by holding classes at a local library to teach many aspects of computer literacy, attend STEM nights for lower grades, and go to every open house at each section of our school

Success Measures

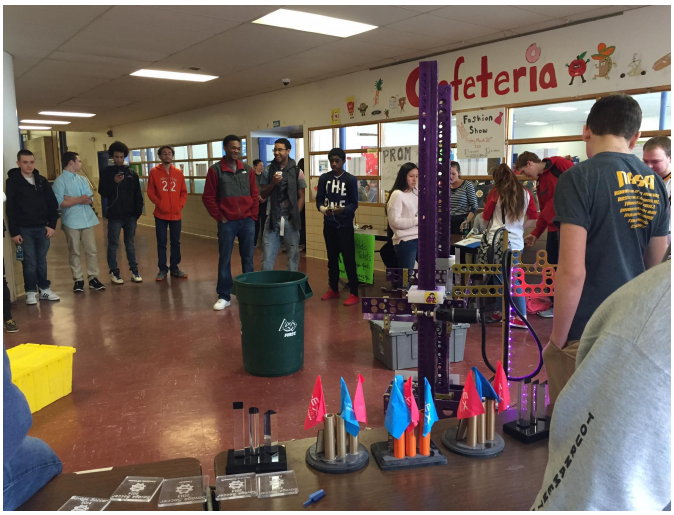
95% of the Bizarbots members who decided to attend college have majored in the STEM fields.
75% of those graduates are currently mentoring the team.

Program Benefits

For Students

- Engineering and technology literacy

- Business development and communication skills
- Community outreach and service
- Internship opportunities
- Leadership and project management experience
- Cooperation and collaboration skills
- Homework help and tutoring
- Over 16 million dollars in scholarship opportunities
- Exposure to STEM career opportunities
- Strengthens logic skills
- Able to apply school curriculum to real world projects Increased interest in STEM
- Develops creativity
- Character building and personal growth
- Promotes self confidence



Education to foster a love of learning

- Promotes STEM Education
- Character building program
- Recognition
- More independent and engaged students

For Mentors

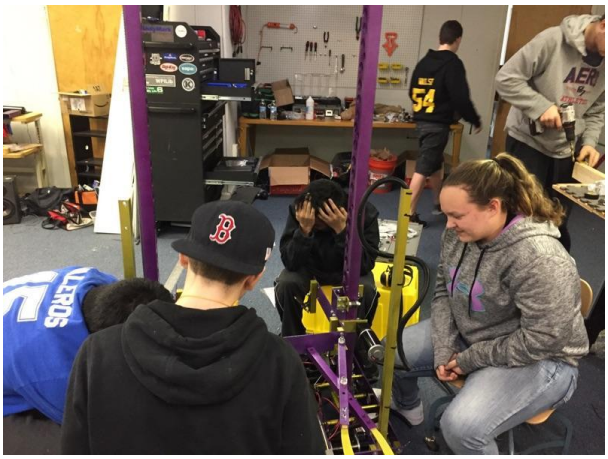
- Enriching opportunity
- Community service
- Engineering and technological experience
- Project management and leadership experience

For Schools

- Exposes students to Math, Science, Engineering , Business, Finance, Computer Science, Fabrication, and Language Arts

For Sponsors

- Creates networking opportunities for interns and future employees
- Engages employees in volunteerism opportunities
- Provides employees with team-building opportunities
- Recognition and respect within the community



Summary of Growth

Autumn 2013 – 10 Students

- 3 competitions a year

April, 2014 -- 30 Students

- Increased interest in STEM
- Potential involvement in FRC

November, 2014 – 60 Students

- Savage Soccer Competition, won a total of four awards
- Involvement in FRC

March, 2015 - 60 Students

- Participated in two district FRC events
- Won Rookie Inspiration, Rookie All-Star, and Highest Rookie Seed awards
- Our alliance placed fifth in quarterfinals in the Rhode Island District Event

August, 2015

- Became a 501c(3) organization
- Won Savage Soccer Competition
- Ran a summer camp to increase interest in STEM

September, 2015 - 25 Students

- Savage Soccer 3rd place

February, 2016

- Competed in 2 district events
- Went from CAD to physical robot
- Prototyped our entire robot digitally in order to reduce costs and design time

September, 2016

- Won Savage Soccer competition
- Rebuilding year (did not compete in FIRST)

September, 2017

- Created two new youth teams with an impact on over 40 new students
- Started Enable project to help the less fortunate obtain prosthetics

March, 2018

- Won FIRST Judges award
- Came in 3rd place at New England District FIRST Event

March, 2019

- Won FIRST Engineering Inspiration for our work on prosthetics

Actions being taken to Grow and Develop the Team:

- Video and print promotion within the school and local media
- Robotics presentations to prospective younger students
- Fall Open House to recruit interested students
- Year-Round work on technical and outreach activities
- Interviews and formal feedback from student team members and parents
- Formal business planning
- Foster stronger community partnerships with local high schools and organizations

Organization/Structure

Our students are incorporated in all aspects of the team and are not constrained to a single area of work. Consequently, students have opportunities to explore and participate in multiple fields of engineering and business. In a progressive environment like this, we hope to foster a more nurturing and enlightening experience for the students. However, we do incorporate some form of structure into the team in order to maintain balance and communication.

The Board of Directors is a committee of adult mentors who make overarching decisions about the team's decisions and finances. They meet very rarely and mostly function as a moderator to the students and mentors.

Student officers are two student members elected by the Board of Directors to represent and lead the team as a whole. They conduct the required bi-weekly team meetings and make minor decisions within the team.

Department Heads are three students who administer and mentor other students in specific facets of robotics. This year, our three departments are C.A.D and programming, fundraising and media, and build.

Marketing Strategy

Targets and Goals

Students in our schools

- Spark an interest in STEM, join the team, and 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 parents about the team's activities
- Ask them to mentor and support the team
- Encourage them to find mentors and sponsors for the team

The General Public

- Promote educational robotics programs and their benefits
- Support programs in their community
- Spread programs to new communities

Methods

Website (www.bizarbots.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.

Twitter (www.twitter.com/bizarbots)

- 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/BizarBots)

- Easy access to the activities of the team along with photos and videos of our projects.

YouTube Channel (www.youtube.com/user/BizarBots)

- To display our competitions and progress

Instagram (@bizarbots)

- A creative way to share photos of our team

Handouts and Flyers

- Direct media to students in our school and to the community about our events.

Town Television Program (HCAM)

- We have been featured on HCAM at school committee meetings and various events. They have featured coverage of one of our fundraisers and even created a thirty minute documentary of our 2014-2015 FRC season.

Newspaper articles (Holbrook Sun & Holbrook Hub)

- This allows us to reach an audience that doesn't normally attend our events.

Recruitment, Attendance, Participation and Behavior

Recruitment:

- In the beginning of the school year, we have everyone who is interested in the Robotics club come and meet together. Then we explain what our club is about and what we do in our club.
- We also tell people they are always invited to join the team.

Projected Financial Expenses

FRC Costs

Event	Cost	Notes

2 FRC District Event Registrations	$5,000	(Potential Grant; Received one for 2014-2015 Season)
FRC District Championship	$4,000	(Dependent on success at District Events)
FRC Regional Registration	$4,000	
FRC Championship Registration	$5,000	(Dependent on success at District Championship)
FRC Construction Budget	$10,000	
FRC Away Regional Hotel	$6,000	
Transportation to FRC Championship	$2,500	
Hotels for FRC Travel	$4,300	
Transportation	$2,500	
Total	$57,000	

VEX EDR Costs

Event	Costs	Notes
VEX Registration	$500	
VEX League Registration	$400	
VEX Regional Registration #1	$300	
VEX Regional Registration #2	$300	
VEX Worlds Registration	$750	
FRC Construction Budget	$10,000	

VEX Robot Parts	$2,000	
Transportation to VEX Championship	$4,000	Airfare for 20 students
Hotels for VEX Championship	$4,000	
Total	$22,250	

Misc

Event	Costs	Notes
Miscellaneous	$2,000	Banners, Handouts, etc.
Tools and Machines	$5,000	
Laptops and Tablets	$3,000	
Saturday Build Lunches	$2,000	
Total	$12,000	

Beyond materials cost, the team is also in need of mentors that could help in the following areas:

CAD:

Work with students focusing on the use of CAD from idea formation to assembly integration.

Electrical:

Work with students focusing on various aspects of electrical components from motor selection to wiring implementation and component placement.

Programming Work:

Work with students focusing on target systems and GUI software to support the testing and operation of robots and robot features.

Engineering Design:

Work with the team to pick a strategy, design a robot, manage robot creation, and lead/advise on the design of a robot feature.

Mechanical:

Help students build structurally sound robots for both VEX and FIRST competitions in the future

Website:

Teach students how to build and manage a website.

Graphic Design:

Create improved banners, logos, team handouts, and t-shirts for upcoming competitions

Finance:

Help students manage team funds and assist with fundraising.

Prototyping:

Assist with the design of robots and teach the students how to create a basic prototype.

Social Media:

Work with students to manage social media sites.

Degrees of Sponsorship

Friends of BizarBots - $1-$49

Website: Name on sponsorship page.

Memorabilia: “Thank you” letter.

Pewter Sponsor - $50-$100

Website: Link on sponsorship page.

Social media “Shoutout” on Team Facebook, Twitter page and Instagram Page.

Memorabilia: “Thank you” letter.

Bronze Sponsor - $101-$250

Website: Link on sponsorship page.

Social media “Shoutout” on Team Facebook and Twitter page.

Memorabilia: “Thank you” letter and a BizarBots T-shirt.

Banner: Business card size logo (displayed at events and tournaments).

Team Shirts: Line of text on shirt (worn at events and tournaments).

Silver Sponsor - $251 - $500

Robot: Business card size logo of business.

Banner: Business card size logo (displayed at events and tournaments).

Team Shirts: Line of text on shirt (worn at events and tournaments).

Website: Logo and link on sponsorship page.

Memorabilia: Thank you letter, framed signed photograph of Team, 2 BizarBots tshirt.

Gold Sponsor - $501 - $1000

Robot: Small logo of business.

Banner: Small logo (displayed at events and tournaments).

Team Shirts: Small logo on the backs of team shirts (worn at events and tournaments).

Website: Logo and link on sponsorship page.

Memorabilia: Thank you letter, framed signed photograph of Team, 3 BizarBots tshirt.

Platinum Sponsor - $1001 - $5000

Robot: Medium logo of business.

Banner: Medium logo (displayed at events and tournaments).

Team Shirts: Medium logo on back of shirts (worn at events and tournaments).

Website: Logo & link on sponsorship page.

Memorabilia: Thank you letter, framed signed photograph of Team,BizarBots Sweatshirt, 2 BizarBots t-shirt.

Titanium Sponsor -$5,001 - $15,000

Robot: Medium logo of business.

Banner: Large logo (displayed at events and tournaments).

Team Shirts: Large logo on back of shirts (worn at events and tournaments).

Website: Logo & link on sponsorship page and logo on first page.

Memorabilia: Thank you letter, framed signed photograph of Team,BizarBots Sweatshirt, 3 BizarBots t-shirt.

Invitation to end of year celebration.

Kryptonite Sponsor - $15,000+

Tournaments: Your Company will be thanked during competition alliance selections nationally televised on the Discovery Channel and on tournament travel invitations.

Robot: Large logo of business.

Banner: Large logo (displayed at events and tournaments).

Team Shirts: Large logo on back of shirts (worn at events and tournaments).

Website: Logo & link on sponsorship page and logo on first page.

Memorabilia: Thank you letter, framed signed photograph of Team,BizarBots Sweatshirt, 10 BizarBots t-shirt.

End of Year demonstration of the robot at your company.

Invitation to end of year celebration.

Contact Information

BizarBots Robotics

Attention: Kevin Monteith

245 South Franklin Street

Holbrook, MA 02343

Phone: 774-222-0650

Email: bizarbots@gmail.com

Website: BizarBots.org