

LB POLY RABBOTICS: TEAM #7042

**Long Beach Polytechnic High
School**

2020-2021 Business Plan

**COMPREHENSIVE PLAN TO FOSTER GROWTH, INNOVATION,
SUSTAINABILITY, AND EXCITEMENT IN STEM**



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1. Executive Summary

Long Beach Poly Rabbotics is a FIRST FRC (Team #7042) established in 2017, representing Long Beach Polytechnic High School. The team was established by a founding class of seven seniors, dedicated towards expanding knowledge in STEM, involving in outreach, and developing long-term communication and marketing skills.

We continue to serve in order to provide authentic engagement in science, technology, engineering, and mathematics. Through the experience of building a functional robot to compete in First Robotics Competitions, the thrill of discovery and the fun of sports will combine to incite true passion for science and technology as well as instilling in its participants the values espoused by FRC: cooperative competition and gracious professionalism. [goal is to provide a dynamic working environment for students interested in STEM fields. Students learn not only STEM-related SKILLS, but also gain experience in graphic design, CAD, software applications such as Microsoft Excel and Photoshop familiarization as well as business promotion, fundraising and community outreach.

Today, the team has grown to over 35 students, with four mentors and one Lead Advisor, expanding the scale of the team, and involving itself in logistics (business) and technical sides of the robotics experience. We are working in a newly renovated workshop, with a vast set of equipment, machinery, and tools, as well as multiple sets of laptops and desktop computers.

We are dedicated towards filling a major void in the FRC community, of expanding STEM to lower income and/or less exposed areas in our local members. These initiatives' origins begin with our diverse class of students and the current outreach programs in place; we look to build on this instrumental progress.

1.1 Mission/Vision Statements

Vision Statement:

To prepare the next generation of STEM leaders and innovators by building a coalition of students, mentors, and community partners working together to further STEM education and initiatives in the local Long Beach and FRC communities. This is fulfilled through successful team operations; a student-led and vision-oriented culture; and a variety of workshops, demonstrations, and competitions.

Mission Statement:

To build a sustainable, well-functioning team whose members enthusiastically explore the fields of engineering, science, technology, and mathematics, while inspiring others to follow suit through profound, committed outreach/community service connections.

1.2 Short-Term Goals

- Build a robot in the 6 week period that accomplishes each of the tasks asked for
- Become Finalist at Regional
- Compete at World Championships
- Earn enough money to facilitate our team for the 2019-2020 school year. To pay for materials, competition entry fees, traveling, and team merchandise.

1.3 Long-Term Goals

- Expand the team population and member density.
- Improve funding and fundraising opportunities.
- Creating a more productive and organized workspace
- Make the long beach community aware of our team so we can get more community support
- To fully develop the FRC values of cooperation and gracious professionalism in its members
- To help team members develop strong understandings of fields such as engineering, programming, design, business, and outreach
- To gain valuable experience in STEM-related fields while working with experienced mentors
- To provide exposure to STEM and the FRC values in middle school and elementary students
- To create a fun, welcoming environment to stimulate growth and companionship between team members, to learn to communicate effectively, to respect each other, and to enjoy friendships while learning about engineering and related fields

2. Team Information

2.1 FIRST Description

FIRST, For Inspiration & Recognition of Science and Technology. An establishment started in 1992 serving to empower children of all ages by making hands-on STEM projects more widely accessible. They have four divisions categorized by grade level: FIRST Lego league Jr. (K-4), FIRST Lego League (4-8), FIRST Tech Challenge (7-12), and FIRST Robotics Competition (9-12). Poly Rabbotics participates in the FIRST Robotics Competition where they compete against other high school teams.

This year's kick off was January 6th. A six-week building period leads up to the competition dates in mid March. Students work alongside professional mentors from companies such as Boeing, Gulfstream, and Raytheon to design, build, and program a competitive robot whose functionality is determined by this year's FRC game.

There are seven weeks of competition in addition to two extra weeks for national championships. The team will be participating in regional competitions held in Los Angeles from March 15-17 and Orange County from March 22-24.

2.2 Team Description and History

In 2013-2014, a Long Beach Polytechnic High School junior, Megan Guttieri, learned about FRC and became inspired to form a team. Working tirelessly, she found a faculty advisor and found multiple mentors in aerospace engineering to form FRC Team 4997, The Golden Machine.

The team was phenomenally successful despite their rookie status, and the team members became true devotees of FIRST. The teacher advisor, however, was unable to continue in her role, and the team disbanded.

Team members from 4997 found other teams in surrounding communities to continue their participation in robotics. But they never forgot that wondrous rookie year and hoped to see a team form again at Long Beach Polytechnic. This desire coincided with the goals of Michelle Aberle, teacher at Poly and Facilitator of the PACE program there. When one of the former team members of 4997 reached out and discussed starting a new team, Dr. Aberle jumped at the chance. Thena Guttieri, now a member of the FRC Team 4999 that formed after Team 4997 disbanded and sister to the founder of Poly's first team, went to work organizing and recruiting in Poly science classes to get new members. She created the organizational guidelines necessary for a new team's function and located suitable building space at Poly where a team could build robots. Once the team began functioning and establishing leadership structures, Thena gracefully stepped back as Team 7042 excitedly assumed the reins.

2.3 Team Structure and Organization

We are committed towards providing a structured form of leadership through our team, including usage of captains, main leads for business and technical sides of team, and respective leads. This allows for an easy path of communication and productive decision making through the entire season.

Team Captains

Hamid Torabzadeh and Garrett Schnack are the team Co-Captains of Poly Rabbotics. With their guidance, the team of around 30 students and 5 mentors is properly maintained, organized, and operated. They offer both engineering and operation guidance and advice, and coordinate team leadership in the areas of mechanical, electrical, programming, CAD, design, marketing, outreach, media, art/merchandise, and financials.

They organize team events; coordinate calendar, student and mentorship attendance; overview all team decisions; act as facilitators between mentors and students, resolve any prospective team conflicts; make sure that decisions go through leadership first to take into other opinions/suggestions; and organize initiatives between the school and team.

Engineering Director

Miguel Saenz serves as Engineering Director, overseeing design and integration of overall systems design incorporating mechanical, electrical, and programming aspects. He also leads the manufacturing of the robot through build season.

Operations Director

Sophia Callan serves as Operations Director, leading operations and marketing aspects of the team. She is involved in communications involving: website design/maintenance, social media, community outreach, financials, mailing lists, and parent involvement. She also communicates with technical teams to output newsletters and emails.

Financial Lead

Victoria Duffie is serving as our Financial Lead, focused on organizing the financials on the team, and fundraising/outreach events. She leads the organization of technical and logistics funds, as well as the team's funds and income. In addition, she carries direct jurisdiction over networking opportunities, and regular technical (subsystems, design, and manufacturing) initiatives.

Marketing Lead

Don Dao is serving as our Marketing Lead, overseeing and planning the many outreach and educational events the robotics team will participate in. This allows us to educate the surrounding community and be able to communicate with other groups and organizations.

Art/Merchandise Lead

Rashell Ramirez is serving as our Merchandise/Art Lead, focusing on expanding our team's marketing presence, including merchandise such as shirts, wear, pins, hats, etc. This serves us well in terms of fundraising initiatives and outreach events.

Media Lead

Althea Aguel is serving as our Media Lead, overseeing all team initiatives in the areas of graphic design, media outreach/communication, and social media engagement. She oversees platforms including Instagram, Twitter, and Facebook, while leading team endeavors such as the newsletter, blog, and YouTube.

Mechanical Lead

Elizabeth Navarro is serving as Mechanical Lead, overseeing the production, design, and manufacturing of our robot. She leads workshops on machinery, equipment, and tool-usage, as well as expanding the overall team's technical knowledge for STEM related activities. She also teaches measurement practices and structure analysis with regards to the robot.

Electrical Lead

Griffin Jeanette is serving as our Electrical Lead, overseeing the electrical components of our robot, including conductivity, current/voltage control, control system maintenance, and RoboRio

functioning. He also leads the pneumatics maintenance and design, a key factor in the robot's mechanism functions.

Programming Lead

Angelika Canete is serving as our Programming Lead, overseeing the numerous programming initiatives on the team, while leading workshops regarding JAVA programming language, and the programming of our robot's mechanisms and autonomous modes.

CAD Lead

Inanna Khansa is serving as our CAD Lead, leading all team computer-aided design including initial design, drawings, and quality control (QC). She coordinates directly with Mechanical Lead during build season to facilitate a successful build season, while also leading workshops on SOLIDWORKS for new/interested members.

2.4 Team Mentors

Lead mentors for the team are Eric Gever, Boeing Engineer; Robert Guttieri, Boeing Engineer; Arlene Covarrubias, Laserfiche Company; Ms. Lawrence, Faculty Sponsor and PACE Facilitator; Gregory Magistro, Gulfstream Engineer.

Our Lead Advisor is Al Shaheen (Chemistry teacher at Long Beach Poly High School).

Al Shaheen

Al Shaheen is the Lead Advisor for our 2019 "Poly Rabbotics" team. He has been a science teacher for 23 years, having taught chemistry and environmental science. He has taught chemistry at Poly High School for the past six years. He became the Rabbotics Lead Advisor in 2018. Mr. Shaheen's past experience with student STEM programs includes:

- Five years as a MESA (Mathematics, Engineering and Science Achievement) teacher at John Muir Middle School in Los Angeles;
- Five years as an Academic Coordinator for the MESA Schools Program in the College of Engineering at California State University Long Beach.
- Mr. Shaheen enjoys working with, and learning from the Rabbotics students as they develop their skills.

Robert Guttieri

Robert Guttieri is Lead Coach/Mentor 1 for 2018 Rookie team, "Poly Rabbotics", 7042. He began his FIRST Robotics experience as lead Boeing Mentor and Lead/Coach Mentor 2 for 2014 Rookie team, "The Golden Machine," 4997. In interim years, he served as a mentor for teams 4276 and 4999. He has a BSME from Cal Poly San Luis Obispo. He is a structural analysis engineer for Boeing, credentialed as an Associated Technical Fellow with 30 years experience.

His goal is to introduce students to a proactive teamwork environment of critical thinking and gracious professionalism. He is a strong proponent of the Leader-Leader model, which he believes the students will find more rewarding and hopes they carry with them into their careers.

Arlene Covarrubias

Mrs. Covarrubias is one of Poly Rabbotics' Lead Business Advisors, facilitating sponsorship opportunities, merchandise purchases, and team branding/networking potential.

Gregory Magistro

Gregory Magistro is Lead Coach/Mentor 2 for 2018 Rookie team, "Poly Rabbotics", 7042. This is his first year working as a mentor for the FIRST Robotics Competition. Gregory has a Bachelor's of Science in Mechanical Engineering from the University of California Santa Barbara. He has worked as a mechanical engineer at Gulfstream Aerospace designing components for private aircraft for the last 5 years. His main responsibilities on this team are to educate the students on the basics of CAD design as well as basic shop practices and how to use machine tools safely. He challenges the team's mechanical thought process and guided students to create their own designs.

2.5 Team Statistics

At initial recruitment, over one hundred students signed up to join Poly's new team, Poly Rabbotics. As the fall semester began and students gained a clearer picture of their academic responsibilities, the number dropped to twenty-nine committed members who scheduled to be present at meetings and contribute to the team.

Composed of high school students, grades 9 through 12, both male and female, the team is representative of the school's demographics and diversity. We pride ourselves on our 51:49 female to male ratio.

2.6 Team Analysis (Chart)

Rookie Year	2018
Founders	The 7042 team was founded by Dr. Michelle Aberle, chemistry teacher and science co-chair at Long Beach Polytechnic High School, and Long Beach Poly Senior Thena Guttieri (FRC 4999) whose passion for robotics through FRC motivated her to help establish a team at her own high school, Long Beach Polytechnic.
Team Demographics	The team is composed of high school students, grades 9 through 12, both male and female. The team is representative of the school's

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	demographics and includes members of many races and ethnicities. Plans are in place to begin recruitment efforts of incoming ninth grade members during the team’s rookie year post-competition season.
Location	Long Beach Polytechnic High School, Long Beach, California
Advisors	Our teacher advisor include Al Shaheen (Chemistry teacher)
Sponsors/Donors	First, Boeing, Poly Burgers, BBQ Chef, Stephen E. Adams, DDS, Gold Star Technology, Mount St. Mary’s College, Industrial Metal Supply, CALNETIX Technologies, Long Beach Unified School District, Green Industries, Lisi Aerospace, Long Beach Neighborhood Foundation, KPFF Consulting Engineers, Andrea Testa Realtor, FIRST, Long Beach Polytechnic High School
Mentors	Robert Guttieri, Boeing engineer; Gregory Magistro, Gulfstream engineer, Derrick Joyner, Raytheon engineer, Kathryn Farrell, entrepreneurial and fundraising advisor, Dr. Lester Reams, community outreach and financial advisor, and Dr. Phyllis Reams, website design
Plans	<p>The team plans to extend community outreach to middle schools during its second year and elementary schools beyond year two to involve more students in STEM and to spread the FRC values of coopertition and gracious professionalism among the youth of Long Beach. The team is also actively creating a collaborative relationship with other more experienced FRC Teams, 687, 3309, and 4999, also in Long Beach, recruiting additional mentors, and establishing relationships with mentors of other more experienced teams to gain practical experience in engineering as well as learning about sustainability and outreach.</p> <p>The team will have to focus on extensive fundraising to build its equipment inventory and to continue to practice building robots and competing in FRC events. The team also plans to extend its workshops in all areas required to build robots and successfully display our work to the community, including outreach and fundraising, marketing, and graphic design for advertising and development of informational materials.</p>
Social Media	<p>Website: https://lbpolyrabbotics.org/ Instagram: @polyrabbotics Facebook: polyrabbotics</p>

3. Marketing Plan

3.1 Strategy

Throughout LB Poly Rabbotics’ marketing techniques, there is an overarching goal to serve the best interests of the team, while putting forth specific proposals and opportunities to invest in the local community (promoting STEM and technical activities). Through this approach, there is a definite path towards providing for the long-term sustainability of the funds of the team, as well as prioritizing outreach opportunities for individuals.

3.2 Purpose, Benefits, Target Market

The single most critical marketing opportunity for LB Poly Rabbotics includes a profound presence in the FIRST and Long Beach communities, in order to expand members’ technical and business expertise, create a powerful message for empowering young students in STEM, and to collectively prepare/engage the next generation of innovators and engineers. In addition, we directly target industrial and corporate partners in order to expand opportunities and resources to engage members in significant and meaningful scopes of learning.

3.3 Niche, Tactics, and Identity

LB Poly Rabbotics offers a unique dynamic of hard-working, talented, and highly motivated students committed toward advancing personal expertise, while concurrently assisting in building a team of STEM-initiative and sincere technological progress.

Through our technical initiatives, there is an abundance of differing points of view and educational resources. With unique programs and initiatives, universality is developed with regard to equipment and necessary tools, paired with invaluable insight by mentors and fellow peers.

4. SWOT Analysis

4.1 Strengths and Weaknesses

Strengths: <ul style="list-style-type: none">● Excellent female-male ratio (51:49); expansion of women’s opportunities in STEM related activities and opportunities.● Extraordinary team culture and bonding nature.● Experienced and knowledgeable	Weaknesses: <ul style="list-style-type: none">● Weak technical expertise in relation to machinery and effective use of equipment● Issues with training of members and effective communication among numerous divisions.● Improvement of electrical
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mentors in technical and business areas of team.	organization within the direct construction of robot. <ul style="list-style-type: none"> • Growth of team’s collective assets with regards to communication and direct assistance in divisions.
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4.2 Opportunities and Threats

Opportunities:	Threats:
<ul style="list-style-type: none"> • To invest in greater opportunities in greater Long Beach community, broadening STEM involvement and excitement. • To expand technical side of team, including enriching manufacturing, design, electrical, and programming resources. • To better funding opportunities and invest in significant events/programs to expand budget. • To create more complex, integrated sub-systems in the collective fabrication of the robot, attempting differing designs and more advanced mechanisms for competitive purposes. 	<ul style="list-style-type: none"> • Locating professional mentors that can provide guidance and teaching in the technical areas of engineering, programming, design, and fundraising. • Finding faculty sponsors who can contribute the number of hours necessary to get through build and competition seasons successfully. • Recruitment of younger students to ensure sustainability of the team. • Securing adequate funding to provide the tools, equipment, and other resources to be a successful robotics team.

5. Operations Plan

Team 7042 created a meeting schedule for preseason, build season, competition season and postseason. Prior to build season, members of Poly Rabbotics participated in several workshops that provided training in necessary skill areas such as engineering, CAD design, and programming and also gave an idea of the time commitment that build season demands. Leading up to build season, the team held regular meetings during lunch on Mondays and Wednesdays, as well as after school meetings from 3pm-8pm on Fridays to clean and organize the workspace. Team 7042 is also fortunate to have partnerships with Momentum, FRC team 4999, and Team 4276, both of which allow Poly Rabbotics to attend their workshops and trainings where members have additional opportunities for learning in programming, CAD navigation, and strategic planning, among other essential skills.

The team held a kickoff event in conjunction with team members and mentors from Team 4999, Thena Guttieri's team, to mark the start of this year's build season. It was here that team members were introduced to this year's game and the required functionality of robot. Copies of the game rules were downloaded and made available later in the work area. A scaled game area was marked off on an asphalt area behind the gym at Poly to allow team members to walk through the steps of the game revealed in the kick off, live streaming session.

Poly Rabbotics meetings are held on Wednesdays and Fridays from 3:00 until 8:00 PM and Saturdays and Sundays from 10:00 AM - 4:00 PM. Weekday team meetings begin with an hour of homework and collaborative sessions, then with a short meeting where the immediate goals of the session are listed with specific tasks assigned to specific group members. During season, Team 7042 plans on building a functional and competitive robot for the upcoming regionals in March, which will rely upon the help of team mentors and a strong work ethic on the part of team members. During off-season, Poly Rabbotics plans to visit all science classrooms at Poly to spread awareness of the team and recruit additional members to ensure the future and continued viability of the team. Planning for additional and targeted fundraising efforts will also be necessary.

The team is beginning to plan the creation of a LEGO League Junior Team with elementary school students at Roosevelt Elementary School, which is located directly across the street from Poly High School. The team will organize visits to the school to provide activities that will engage the students in robotics and get them excited about technology. There are two other elementary schools in the team's vicinity, Cesar-Chavez and Edison Elementary, both of which Poly Rabbotics plans to visit during the off-season. The team will continue to hold weekly meetings during the off-season to discuss financials, outreach, and recruitment, as well as hold workshops on mechanical and electrical engineering, programming, and CAD design.

The team has much to accomplish over the next five years. Targeted fundraising towards aerospace, automobile, and technology companies may further ensure that the team is adequately funded for the future. A parent coordinator will be sought next year to be in charge of organizing team members' parents for providing snacks and evening meals during build season. Parents will be asked to aid in finding additional mentors and fundraising among their circle of friends and professional contacts. Parents will also be enlisted to develop a newsletter, a parent email and communication channel, and assist in the organization of transportation around the community for outreach, and get to regional competitions.

Poly Rabbotics hopes to continue building and practicing with the robot that was built during the 2018-2019 season and be able to fund the building of smaller robots to hone skills that will doubtless be needed for upcoming seasons.

With multiple elementary schools nearby, the team will visit schools to engage the children with robots from our build season, thus promoting STEM education and demonstrating the challenge and fun of robotics. The team will maintain its space, organize all equipment and tools, and create inventories of all building materials to engage in robotics as efficiently as possible.

5.1 Tasks

- Poly Rabbotics aims to continue to have all of its members participate in bettering the team through not only improving their knowledge in STEM, but through a collective participation in the logistical aspects and organization of the team.
- Poly Rabbotics hopes to have every member participate in at least one community outreach project where the team will go out into the community to further educate people on the importance of STEM through robotics.
- Poly Rabbotics is making efforts to extend its workshops in all areas required to build robots and successfully display our work to the community, including outreach and fundraising, marketing, and graphic design for advertising and development of informational materials.

5.2 Communication

- Communication between members and mentors is to be seen as a partnership rather than a “teacher to student” situation.
- Communication between members and leads is to be seen as a partnership rather than a “teacher to student” situation.
- Poly Rabbotics aims to have constant communication between technical and nontechnical groups of the team in order to continue progress in both aspects of the team.
- We strive to use platforms including: Remind, Google Classroom, and Slack in order to better facilitate processes among the team and its respective functions.

5.3 Learning Strategy

- Poly Rabbotics is to have all of its members participate in bettering the team through not only improving their knowledge in STEM, but through a collective participation in the logistical aspects and organization of the team.
- The team hopes to learn more about team building and organization through participation in the nontechnical aspects of the team such as displaying our work to the community through outreach and fundraising, marketing, and graphic design for advertising and development of informational materials.
- The team also puts a systemic focus and value on resources available through technology media platforms, mentorship guidance, FRC community chats/information, and information pamphlets/booklets provided in the FIRST organization.

6. Technical Initiatives

6.1 Mechanical Division

The mechanical division strives to promote and complete expansive opportunities and activities within numerous aspects of the division, including: manufacturing, machinery experience/expertise, FRC-related concepts/designs, and the prototyping process (from sketches, to CAD, to working prototypes).

In relation to manufacturing expertise, instruction and workshops regarding use of machines including: mill, lathe, drill press, band saw, and miter saw, will be prioritized, allowing members to become directly involved with the greater manufacturing process. This will also allow for direct work on the construction of the competition robot, in conjunction with the aforementioned workshops, throughout the season.

Moreover, with regards to the instruction of FRC-related concepts/designs, extensive workshops will be completed, covering aspects including: drivetrains, arms, claws, and other popular mechanisms. In addition, workshops concerning team cohesion and other general engineering topics will be provided, in order to make sure all members can pursue topics that interest them.

Another key component of the opportunities offered within the mechanical division is the familiarization with the design process. This process is one of the most crucial components of engineering, and is given a heavy emphasis in our program. Taking an idea and transforming it into a sketch, then a CAD, a prototype, and then a working model is truly the essence of the mechanical division. It also allows for one to carry their own creativity into problem solving and collaborate with others to find the best way to overcome obstacles.

With this division, we hope to provide to our members the opportunity to creatively solve problems, and familiarize themselves with the engineering process as a whole. It is our hope that, through our efforts, we will give team members the ability to thrive under any conditions provided to them, and surmount any challenges presented to them, whether it be in the sphere of engineering, or in any other instance.

6.2 Electrical Division

The electrical division strives to bridge the systems and respective components of the mechanical and programming divisions. Through preseason, members work on the following processes: procedural standards in wiring the robot and laying out prospective electrical grid; creation of a comprehensive button panel to serve as a driving mechanism throughout build season; and to teach members of pneumatics basics, fundamentals, and respective opportunities.

In regards to the electrical field, we will wire the robot to different components so that the robot is able to perform different actions such as movement, sensors, cameras and switches. Members will learn about connecting motors and motor controllers together to the PDP, for movement as well as configuring the VRM to use cameras and lights. Everything will connect back to the RoboRio, the heart of the robot. Additionally, members will learn how to prepare wires to be used on the robot. Stripping wires and soldering will be learned as the most basic structure of putting together the electrical system. We plan to keep a clean and organize our robot cabling so that we can have an effective and successful robot.

Members will also learn how to put together a pneumatic system, as well as the basics on how it works. A Pneumatic system uses compressed air to have automated equipment. Components such as the PCM, compressor, solenoids, pressure switch, and air tanks will all compile to actuate pneumatic cylinders.

6.3 Programming Division

The programming division looks to continue to expand opportunities for all members of the team in three main areas: conducting comprehensive workshops prior to build season, fulfilling programming goals in tight conditions, and enabling convenience in programming organization.

First, throughout the offseason, through programs like Udacity and GitHub, members are able to familiarize themselves with the fundamentals of JAVA programming language and sorting coding information for easy accessibility and efficiency. All members should gain the basic knowledge foundation for competition purposes and tight deadline requirements.

In addition, with long-term sustainability, a wide variety of members, possessing different skill sets, should have the opportunity to understand programming basics, in order for our team to thrive under numerous conditions.

6.4 Computer-Aided Design (in conjunction with Mechanical Division)

Another part of our team is our design/CAD division. The goal of this group is to design the robot and then model it using 3-D modeling software to create a plan for the robot. A major goal of this division is to completely CAD the robot before building it. We hope to do this as it is how real engineers manufacture parts and assemblies, and it will ensure that there are very few mistakes during manufacturing.

Another goal of this department is for every member to know how to CAD and read a drawing, everyone can be a part of the design process and so design and manufacturing can communicate effectively. The design process works by coming up with ideas and sketches incorporating our goals for what the robot will do. Then we CAD a prototype using SOLIDWORKS to have a clearer idea of the function of the design. After that, we build the prototype. After the prototype is complete we will finish CADing our actual robot, after which we will start construction.

7. Finances

7.1 Sponsorships/Grants

Long Beach Poly Robotics is currently sponsored by a variety of local businesses, companies, and organizations. We look forward to developing long-lasting outreach connections and a steady source of funding for resources and tools.

CALNETIX Technologies
Industrial Metal Supply
Lisi Aerospace
Boeing
FIRST
Green Industries
Long Beach Polytechnic High School
Long Beach Unified School District
Long Beach Neighborhood Foundation
KPF Consulting Engineers
Ana Arguello
Andrea Testa Realtor
California Heights Methodist Church

We plan to strategically target donors who will contribute not only funds, but also expertise and, in turn, benefit from their association with the team. We are happy to place logos and trademarks on our team shirts, banner(s), etc. to promote their business interests.

7.2 Sales Projections/Fundraising

Our team bases their fiscal year from Aug 30 to June 30. The team has determined the following as this year's budget.

Projected Balance Sheet

Income

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<i>Sponsors</i>		
	Long Beach Unified School District	25,000.00
	Other companies	1,000.00
	Total Income	26,000.00
Business Expenses		
<i>Competition Fees</i>		
	Rookie fee	6,000.00
	Beach Blitz Fee	4,000.00
	Total Competition Fees	10,000.00
<i>Facilities and Equipment Fees</i>		
	Robot Parts	5,000.00
	Tools	2,000.00
	Total Facilities and Equipment	7,500.00
<i>Team Spirit Purchases</i>		
	T-Shirts	528.00
	Polos	528.00
	Pins	500.00
	Total Spirit Purchases	1,556.00
	Final Total Expenses	19,056.00
Probable Expenses		
<i>World Competition Travel</i>		
	Flight Expenses(Houston, TX)	11,725.00
	Hotel Stay(Best Western/2 per room)	1,350.00
	Total World Championship	13,075.00

	Expenses	
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7.3 Member Contribution

Long Beach Poly Rabbotics gains funding largely in part due to team members’ individual contributions in the name of Club Dues.

Members (35)	TOTAL:
\$150.00/each	\$5,250.00

7.4 Budget

LB Poly Rabbotics Account	\$ 4,113.73 (at beginning of year)
LB Education Foundation	\$5,289.00 (at beginning of year)

8. Outreach/Community Involvement

8.1 Impact

The Long Beach Poly Robotics team is refining its community outreach efforts to raise awareness of their activities, goals, and values. Poly Rabbotics uses its knowledge of robotics to become engaged in the community while also gaining recognition for fundraising efforts. For example, on First Friday, a sponsorship night held at Bixby Knolls, a neighborhood in Long Beach, the team received support and collected logos to place on their banners, shirts, and robot.

The FIRST LEGO League Jr. is an event that allows teams to utilize their robotics knowledge to educate others on STEM. By participating in this event, the team is able to help younger children explore mathematical and scientific challenges faced in the STEM field. This way team members can impact the League Jr. by teaching them life values such as teamwork and presentation skills. The team hopes that getting involved in the FIRST LEGO League Jr. will give the team the opportunity to inspire younger students to be enthusiastic and motivated for future endeavors in STEM.

Poly Rabbotics not only wants to impact younger children by educating them but also by putting a smile on their faces. The kids at the Miller Children’s Hospital generally are not able to leave their place of care, so the team would like to visit them to spread positivity. Team

members plan to do this by bringing their robot to entertain the children and make them laugh. The hope is that when the day comes that those children can leave the hospital, they will be ready to join a robotics team to learn work and life skills in STEM and collaboration.

Poly Rabbotics aims to impact more of the Long Beach community as the team becomes more developed. As a rookie team, members had to reach out for assistance or teach themselves multiple aspects of teamwork and building a robot. The plan is to recruit additional professional mentors to extend the learning and growth of knowledge in STEM fields. We hope to interface with other experienced teams in Southern California to share resources, experience, and expertise. Our desire is to inspire other teams by showing them that with hard work and cooperation, any dream can be achieved.

8.2 Existing Programs

- Poly Rabbotics had participated in the local science Faire in which our team was able to showcase our robot and educate other students that were interested in pursuing STEM.
- Poly Rabbotics had also participated in several school events such as Open House and the Intercultural Faire at Long Beach Polytechnic Highschool.
- Poly Rabbotics has also reached out to a local church and educated children about the importance of STEM through robotics.
- Continuation of regular fundraisers across numerous organizations and entities, in hopes of both raising funds and engaging in networking and outreach opportunities.
- Constant engagement and participation in regional and school activities, allowing students to have access and exposure to Poly Rabbotics and respective engineering programs and opportunities.

8.3 Long-Term Goals

- Be able to collaborate with other highly experienced teams and be able to share knowledge and resources
- We want to be able to educate our surrounding community about the importance of STEM. Such as children in hospitals, schools, and other organizations.

8.4 Merchandise/Art Initiatives

Throughout Art & Merchandise, the team strives to reflect our diverse, unique, and experienced outlook, while presenting visually appealing and creative designs. These include the production of generic shirts, competition apparel, and generic wear. Moving forward, the division looks towards selling small, collectible items at local schools, events, and/or demonstrations. These could include 3D printed keychains, logos, statues, etc.

Ultimately, a vision of exclusive Rabbotics branding is expected, with distinct qualities portrayed, reflecting the team's experiences and opportunities. Through this approach, the greater Long Beach community can be enabled to support the endeavors of STEM, while contributing to the greater initiatives of innovation and ingenuity.

9. Safety Initiatives

9.1 Risk Management

- Safety has always been a high priority for Poly Rabbotics.
- The team enforces methods to keep a safe and productive work area. Team members are required to wear safety glasses in the building room at all times.
- It is a requirement to wear closed-toed shoes in the work area, to tie back long hair, and secure loose clothing to prevent it getting caught in rotation power tools.
- Unfocused behavior is not allowed.
- Ear protection is provided and required in the work area when loud tools are in use.
- Fire extinguishers are strategically placed in the room, and their use is reviewed with students.
- A first aid kit is available and placed in close proximity to rotary tools.
- To prevent accidents, the team encourages frequent breaks, allowing for a healthy work environment.

9.2 Safety Goals

- To mobilize the collective participation and engagement of members in becoming safer, more cautious individuals in the laboratory and workshop space.
- To advertise safety methods and tips through differing media platforms in order to create a safer, more efficient and productive FRC and STEM community.
- To invest in necessary equipment and room materials to organize tools and safety resources in a more effective, ideally productive environment.

10. Contact Information

Website: <https://lbpolyrabbotics.org>

Team Email: polyrabbotics@gmail.com

Facebook: @polyrabbotics

Twitter: @polyrabbotics

Instagram: @polyrabbotics

Main Contacts:

Lead Mentor: Eric Gever

Email: ericgever@gmail.com

Team Meeting Information:

Location: LB Poly Rabbotics Room (900 Building-Robotics)

Dates: MW-3:00-6:00 PM (2019); MWThS-4:00-7:00 PM

Sponsorship Information:

Checks should be made payable to: Long Beach Poly Rabbotics

Donations may be tax deductible; please contact the team for more information.

Mailing Address:

1600 Atlantic Avenue, Long Beach, CA 90813

Chief Contributors:

Hamid Torabzadeh, Co-Captain. Email: hamidtorabzadeh.polyrabbotics@gmail.com

Garrett Schnack, Co-Captain. Email: garrett.schnack1@gmail.com

Nicole Lopez, Operations Director. Email: lopezn859@gmail.com

Miguel Saenz, Engineering Director. Email: saenzm4307@gmail.com