



LANCER ROBOTICS

Team 2367 - Saint Francis High School

"Lancer Robotics aims to provide students interested in the fields of science, technology, engineering, and math with the tools and encouragement to become the next generation of critical thinkers and engineers."

Thank you for expressing interest in sponsoring our team and taking the time to read this packet. At Lancer Robotics, we strive to help students discover their passions in STEM subject areas (science, technology, engineering, and math) and educate them in order to help them along their journey to a career in these fields. Many high schools in our area have robotics teams, but we feel that our robotics team is completely student-lead, allowing for students to make critical decisions for the club and impart their knowledge on new members to inspire learning outside of the classroom setting. Our team is relatively new, and we appreciate any help that you can give, whether that is donations of time, experience, funds, or any other resources.

Throughout the school year, we organize events in order to let club members be more hands-on. During our fall semester, the club organizes an intra-school event in which robot teams are made in order to complete a specific challenge. This last year, the challenge was called Wiffle Rush, in which teams were allowed to build robots to score soccer balls and wiffle balls into low and high goals. Through teleoperation, students get to drive their own robots and compete against other teams for the most points. We

believe that by facilitating in this competition, we provide a hands-on opportunity that most other teams are not able to give to their club members. Working on only one robot is a challenge, since only a select handful of people will be able to work on the robot, rather than the whole team.

During our spring semester, our team participates in the FIRST Robotics Competition (FRC), which is an internationally-recognized competitive competition lead by the non-profit organization For the Inspiration and Recognition of Science and Technology (FIRST). Team members meet during a 6-week period to completely model, tweak, and build the robot that is geared toward completing a competition that is released by FIRST. Every year, we have participated in the Silicon Valley Regional Competition (our local tournament) and one travel tournament (usually either the Sacramento Regional or the Central Valley Regional).

We work very hard to do our best with our current resources, but only with the help of sponsors can we truly be able to learn more about the STEM-related fields, receive better guidance on the math and science that goes into robotics, and the funding to buy parts for the robots we build. We thank you for your interest and look forward to working with you in the near future!

Our Origins

The Saint Francis Robotics Team was proposed in 2007 by a group of interested students, including that year's club presidents Mary Beth Wilhelm and Samantha Shireman, Richard Gronberg, along with future club president Kevin Schapansky and future mentor Alejandro Barragan, ranging from all four grade levels – freshman, sophomore, junior, and senior. When math and physics teacher Mr. Michael Rubin agreed to sign on as official club moderator, it was officially established as a registered school club. Equipped with nothing but a few tools, minimal prior engineering experience with starter robotics kits such as LEGO Mindstorms, and with a rudimentary "lab" that was, in reality, a small closet space inside one of the school gyms, the small yet dedicated team

nevertheless managed to slowly build themselves up. They purchased Vex Robotics kits in order to better familiarize themselves with engineering concepts, and at the same time, to emulate a more competitive environment, split themselves up into separate student teams.

The four consecutive months of effort that followed culminated in their own small-scale Vex competition in December, pitting each student team against each other. Subsequently, they registered with FIRST and competed in the 2008 First Robotics Competition game, 'Overdrive'. Rookie Team 2367 from Saint Francis High School, Mountain View attended the San Jose State Regional Competition, and though their ranking was nothing notable, the newly solidified team came home with newly gained experience and their first FIRST robot.

Skills Learned

- Application of math and science concepts to robot design
- Use of power tools in the machine shop including, but not limited to,
 - Lathe
 - Drills (both press and cordless)
 - CNC Mill
 - Chopsaw
 - Tablesaw
 - Bandsaw
 - Hydraulic Press
 - Welder
- Use of computer-aided design (CAD) to design and “test” robot in a virtual space
- Use Java, C++, and Python to program robots both for autonomous driving and for tele-operation
- Collaboration and problem-solving to work and think critically

Club Size

- Club Members - 84
- FRC Team Members - 48
- Board Members - 12

Team Impact

- Inspiring people of all genders and ethnic backgrounds to try working in STEM-related careers
- Build robots to perform functions by the request of school teams or clubs (T-shirt Cannon)
- Allowing upperclassmen the chance to lead the club and develop 21st century skills such as collaboration, teamwork, and technology
- Giving alumni the tools to aim for great university STEM programs and high jobs in the tech industry

Yearly Costs

Here is an forecasted budget for this year:

Current Dedication of Financial Gains	Dedication (in USD)
Competition Costs	\$9,000
Raw Materials	\$4,000
Tool Costs	\$1,000
“Consumer - Off The Shelf” Products	\$5,000
Apparel	\$500
Total	\$19,500