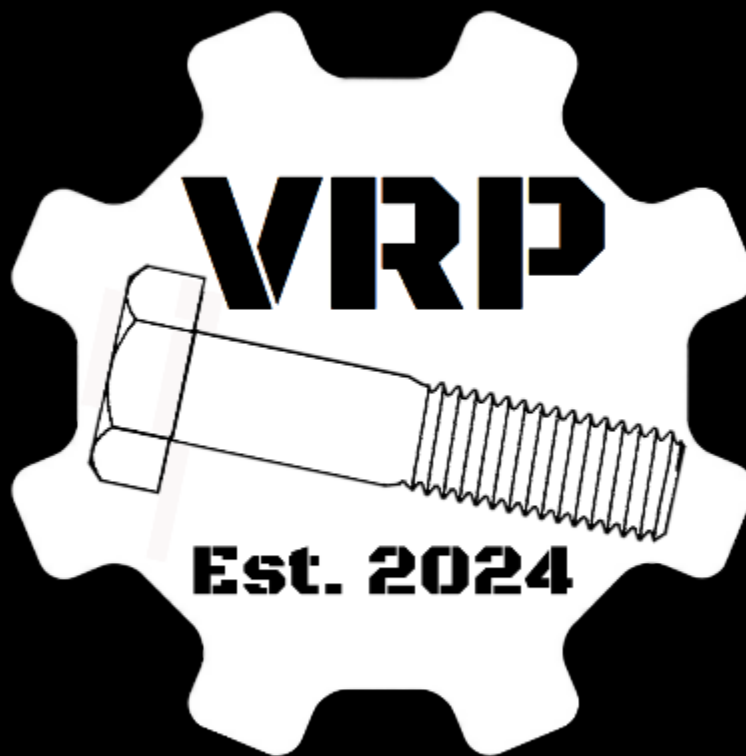


Valley Robotics Program

Nonprofit in Gilbert, Arizona



2024 Business Plan

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Executive Summary

Mission Statement

Valley Robotics Program strives to expand access to quality robotics and engineering education for K-12 students in Arizona.

Insurrection Date

January 9th, 2024.

Organization Summary

Valley Robotics Program (VRP) is a non-profit organization with five volunteers that supports over 160 students across seven local high schools. VRP volunteers primarily support high school robotics teams competing in the FIRST Robotics Competition (FRC). In January 2024, volunteers were supporting four local FRC teams through mentorship, design input, VRP Shop use, and part fabrication. One of these teams was in their rookie year, with only VRP mentors supporting them. From June to August, VRP initiated an Off-Season Training Program for FRC teams. This program involved three weekly online meetings covering a range of topics including manual machining, CAD, and recruiting gender minorities. In June, VRP founded a new community FRC team, Team Scrap Metal. As a community team, Team Scrap Metal is able to support students from numerous schools with limited access to engineering programs. VRP members and students also volunteer at robotics competitions and events. VRP initiated a combat robotics team, STRIKE, with the intention of creating youth teams that the members of STRIKE would mentor.

Location of the Organization

Valley Robotics Program is based out of Gilbert, Arizona near the crossroads of Recker Rd and Williams Field Rd. The supported programs are located in Gilbert, Tempe, Mesa, and Queen Creek.

Sponsors

VRP is currently sponsored by:

- Intel
- Falcon Robotics
- The Seaton Family
- The Fechter Family

Growth

Valley Robotics Program is still in its insurrection year, making it difficult to differentiate between growth and our starting point. The most notable growth VRP has had is founding a community FRC team that will compete in the 2025 season. VRP also plans to support multiple robotics opportunities outside FRC, like combat robotics, and increase the number of supported students.

Future Plans

Valley Robotics Program plans to expand the number of local teams we support and create a more competitive Arizona robotics environment. To achieve this, VRP is focused on onboarding and training mentors such that VRP is able to support a broader area. VRP is also planning to become involved in the FIRST Tech Challenge (FTC) and FIRST Lego League (FLL) communities by volunteering at local events, with the intent of eventually sponsoring local FTC teams. In regards to Team Scrap Metal, VRP's rookie FRC team, we plan on expanding the program

from two students at two different high schools to 30-40 students out of 4-7 different high schools. VRP plans to advance its combat robotics program by competing with its current robot designs at an out-of-state competition. Following the competition, the team's performance will be reflected and VRP, with assistance from the members of STRIKE, will outline a program for youth robotics teams. Eventually, our goal is to support multiple tiers of youth teams, but VRP will begin with a Fairy Weight (150-gram) team or teams depending on funding and interest.

To further our ability to support teams, VRP is also looking to obtain machinery such as a router, drill press, laser cutter, and other supplementary machines and tools. Long-term, VRP hopes to have a dedicated warehouse shop. VRP plans to attend more STEM and non-STEM community service events or activities. As a way to motivate students under VRP to participate in outreach, VRP plans to become certified to distribute PVSAs (President's Volunteer Service Awards). To assist in expanding our efforts, VRP is looking to acquire corporate sponsorships and federally-funded grants.



Organization Overview

History

Two to three years prior to VRP's insurrection in January of 2024, two of the current board members began mentoring a local high school robotics team. Participating in the program and interacting with other local teams led to the desire to improve the quality of engineering education and the level of competition for local high school teams. It is well known that Arizona's high school robotics (FRC) teams are generally not very competitive, leading to teams from other states and countries opting to compete in Arizona. VRP is expecting to see an increase in the level of competition over time as the support we provide reaches more teams.

Roughly 6 months prior to VRP's insurrection, the two board members were providing mentorship to two FRC teams; Team 6479 AZTECH Robotics and Team 9059 COLTech. There was also a focus on gaining tools and machinery that would eventually be used to support any VRP-sponsored teams. VRP obtained a tool chest, a manual mill, a lathe, hardware, and other smaller tools. The tool chest, manual mill, and a large collection of parts came from the retired Hall of Fame FRC Team, Team 842 Falcon Robotics.



In December, while setting up the foundation for VRP, the reach was expanded to FRC Team 698 Hamilton Microbots and rookie FRC team, Team 9704 IgKnighited.

Combat Robotics Team STRIKE was also founded by VRP's current board members and two other adults.

Throughout the FRC season, VRP provided mentorship, a workspace, tooling, parts, stock, and design/strategy input. The different avenues of support were utilized by each team in different ways.

Team 698 has a good organizational foundation and was, in general, mostly interested in design input. During the season, the team won their first design award in their 23rd season. The following quote is from their team president, Rahul: "Not only was team 698 able to have a dedicated workspace outside of school for the first time in years, but the team also learned countless new things from VRP which allowed us to perform the best we have at competition in the last decade."

Team 6479 was going through a major transition period, consistently utilizing all of VRP's offered support. During the season, VRP helped set up a Digital Read Out (DRO) on the team's manual mill as well as train students to use the team's own in-house lathe and mill. The following quote is from their team president, Ben: "VRP has helped reshape our team and give us a crucial boost this season. They provided us with two fantastic mentors who helped teach all team members about the design and manufacturing process thus giving our team the ability to manufacture a large majority of the robot in-house."



Team 9059 was going through their second season and was able to make significant strides from their inaugural season. With the ability to send CAD files to VRP and obtain custom-designed parts, 9059 was able to design and build their first mechanism. The following quote is from their team president, Ethan: “VRP's guidance has been instrumental to our team's performance. They've helped us with building and getting parts, streamlining our work, and contributing directly to our success.”

Team 9704 started their team and was competing for the first time in Arizona. 9704's only mentors are members of VRP, requiring support in each area. In season, they were awarded the Sustainability Award. The following quote is from their team president, Kevin: “It's hard to imagine 9704's success as a rookie team without the unwavering support of VRP. The mentorship, resources, and workspace they've provided us have been instrumental in building our foundation. It's clear that 9704 would never have been possible without VRP's generosity and guidance.”



After volunteering at the FRC World Championship, VRP created an Off-Season Training Program spanning from June to August. To achieve this, 38 presentations

& activities were hosted over the course of 20 meetings with ‘office hour’ meetings each Saturday. The presentations and activities were posted for students to review/present to their own teams.

VRP Off-Season Training Dates

Tues & Thurs 6:00 PM - 8:00 PM, Sat 12:00 PM - 4:00 PM



Week 1

6/4 - Intro to CAD
6/6 - Engineering Drawings, Intro to Assemblies
6/8 - Week 1 Lessons, Help and Q&A



Week 2



6/11 - FRC Mechanisms, Wheel & Drivetrain Types, Crayola CAD
6/13 - Mechanical Process, Prototyping Effectively
6/15 - Week 2 Lessons, Help and Q&A



Week 3

6/18 - Intro to Java, WPI Lib
6/20 - Spreadsheet Magic
6/22 - Week 3 Lessons, Help and Q&A



Week 4

6/25 - MKCAD & Feature Scripts
6/27 - Onshape File Structure, Robot Parts
6/29 - Week 4 Lessons, Help and Q&A



Week 5



7/2 - Torque in FRC, Gearing Basics, Planetary Gearboxes
7/4 - Hardware, Gearbox Design
7/6 - Week 5 Lessons, Help and Q&A



Week 6

7/9 - Measuring, Running a Manual Mill
7/11 - Running a Manual Lathe, Post Processing
7/13 - Week 6 Lessons, Help and Q&A



Week 7

7/16 - Thoughtful Code Management
7/18 - Code Formatting
7/20 - Week 7 Lessons, Help and Q&A



Week 8

7/23 - Recruiting Gender Minorities, Writing
7/25 - Friction, Kinetics, & Kinematics in FRC
7/27 - *No meeting (ARL)*
7/28 - Week 8 Lessons, Help and Q&A



Week 9

7/30 - Electronics, Blink Codes, Bumpers
8/1 - 3D Printed Part CAD, Rollers, Dead Zones
8/3 - Week 9 Lessons, Help and Q&A



Week 10

8/6 - Competition Awards, Winning Awards
8/8 - Strategy
8/10 - Week 10 Lessons, Help and Q&A



Midway through June, a student VRP had worked with in the past reached out with the goal of starting a new FRC team. Although VRP was not planning on starting a team for another year, the student’s enthusiasm was contagious and VRP became set on founding a rookie team that will compete in the 2025 season. VRP members, alongside students from VRP’s rookie FRC team, Team Scrap Metal, volunteered at Arizona Robotics League (ARL) Qualifiers #1, #2, and #3.



Most recently, Team Scrap Metal (TSM) competed at ARL on 8/31. Although the robot did not perform well, TSM's goal was to get a robot on the field and this was achieved. The next competition that TSM will compete at is on 9/21 with many improvements being implemented before then. STRIKE, the combat robotics team, is also in the process of assembling their robots to compete with this upcoming December.

VRP Board Members & Volunteers

Board Members

President: Andrew Fechter

Andrew's passion for engineering began with joining his high school robotics team after his intro to engineering teacher recommended it to him. After joining in freshman year, Andrew has been a part of competitive robotics ever since. Valley Robotics Program allows Andrew to give students industry-level technical expertise which will, over time, improve the quality of robotics teams in Arizona. This is Andrew's fifth year as a mentor.



Vice President: Benjamin Levine

Benjamin participated in robotics competitions in 8th grade with FLL and VEX. In his freshman year of high school, he learned his school had an FRC team and enjoyed it so much he decided to major in Robotics Engineering. Valley Robotics Program gives him the opportunity to stay involved with robotic technology and pass his enthusiasm to the next generation. This is Benjamin's first year as a mentor.



Secretary: Ashley Faucher

Ashley found her love for robotics in high school while on her local FRC team. Her high school team provided her with a strong female student lead, inspiring her to be the same for other women and minorities in the STEM community. It is her personal goal to assist young women in the STEM field to recognize their strength. With Valley Robotics Program, she is now able to reach more students and provide youths with the knowledge and confidence they need to succeed. This is Ashley's fourth year as a mentor.



Volunteers

Valley Robotics Program would like to take the time to thank our current volunteers, Joshua Snow and Sable Padilla, for their time, hard work, and commitment to expanding the quality of and access to resources for students.

Although not officially a part of the program, Valley Robotics Program would like to thank the teachers, parents, and outside volunteers we work with for sharing our ideals and giving students a space to grow.

VRP Students

For the 2023-2024 FRC season, VRP is estimated to have impacted over 160 students. The student count for each team is as follows:

- 698: 25 students from Hamilton High School
- 6479: 73 students from Corona Del Sol High School
- 9059: 28 students from Casteel High School
- 9704: 36 students from Arizona College Prep High School
- 10256: 4 students*, from Chandler High School, Lincoln Preparatory Academy, Millennium High School, and Estrella Foothills High School
 - *Currently in their recruitment period
- Other local teams receive support from VRP while at competitions and are comfortable relying on VRP volunteers for robot repair (mechanical, electrical, and programming) support. These numbers are not tracked.



VRP Management

Members

Membership of Valley Robotics Program is a year-round commitment. VRP strives to prepare all new volunteers for the expectations VRP has of them. The process begins with a conversation between the Board and the prospective volunteer.

There are no membership fees. One of the basic expectations is that volunteers log the hours spent working with other teams.

Structure

VRP is led by its three Board Members. A more detailed structure is outlined in The VRP Bylaws which can be found on the VRP website at <https://valleyroboticsprogram.org/contact>.

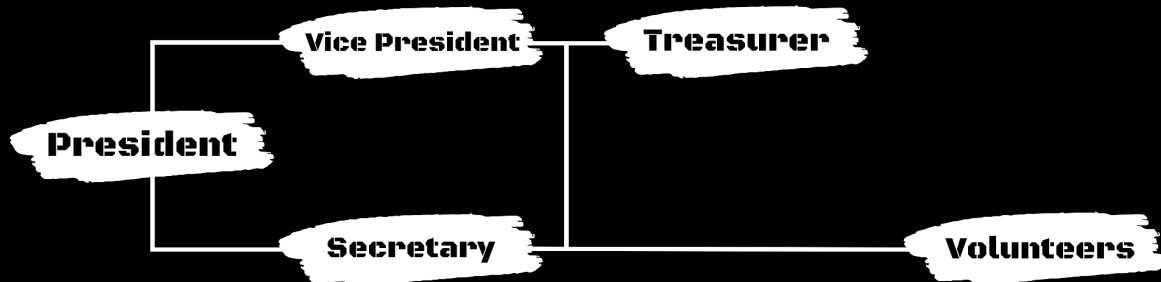
Below is a brief overview of the roles and responsibilities:

- President
 - Leads the Board and organization
 - Takes on responsibilities not covered by other roles
 - Currently includes Treasurer role
 - Leads meetings
- Vice President
 - Assumes the roles of the President if the President is unable to attend
 - Assists the President with any tasks
 - Final editor for any VRP documents
- Secretary
 - Keeps meeting minutes
 - Tracks actions of the organization
 - Appoints new members with the approval of the Board

➤ Treasurer

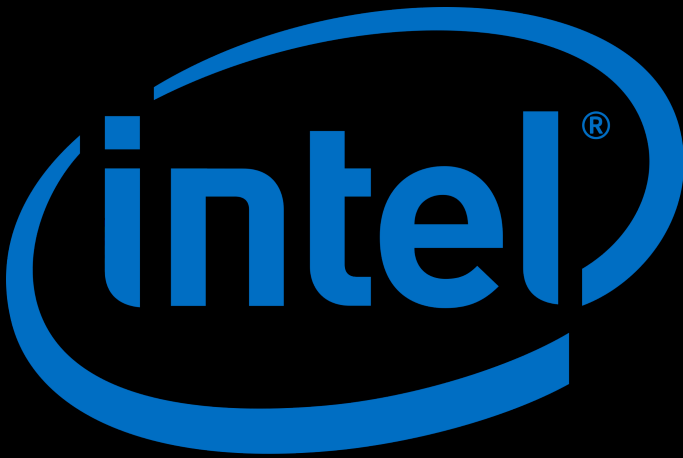
- Oversees the financial condition and affairs of the organization

Role Organization



Budget

Sponsors



Intel

Intel is a multinational corporation that designs, manufactures, and sells computer components. Intel graciously donated \$2500 in matching funds.



Falcon Robotics

Falcon Robotics is a retired Hall of Fame FRC team. They donated a tool chest, a manual mill with a DRO, and \$1000s of dollars worth of parts and tools.

The Seaton Family

The Fechter Family

Supporting Families

The families listed to the left have donated \$3600 to VRP, as well as \$1000s of dollars worth of stock, tools, and machinery.

Income & Expenditures

It should be noted that the income is current, while some expenditures (such as machinery) are *not expected* to be purchased during 2024. While not expected, it should be understood that the acquisition of the listed materials would be more beneficial the sooner we acquire each item. There is potential for many of these items to be donated to the organization as an in-kind donation.

Income

	Income
Corporate Sponsorships & Grants	
Intel	\$2,427.00
Donations	
Seaton Family	\$2,500.00
Fechter Family	\$1,100.00
Student Fees	
VRP Will Never Charge Student Fees	\$0.00
Sub-Total	\$6,027.00

Expenditures

	Cost
Machinery	
2' x 2' CNC Router	\$4,000.00
28" x 20" 80W Laser Cutter	\$3,300.00
Bandsaw	\$800.00
Drill Press	\$530.00
Bambu X1 3D Printer	\$1,450.00
DRO for manual mill	\$1,230.00
Stock	\$3,500.00
Moving	
Trailer	\$3,750.00
Pallet Jack	\$570.00
Combat Robotics	
Electronics	\$400.00
Parts	\$200.00
FRC	
Registration	\$6,000.00
Second Regional	\$3,000.00
Electronics	\$2,300.00
Parts & Hardware	\$5,000
Travel	\$10,000
Sub-Total	-\$46,030
Total	-\$40,003

Opportunities for In-Kind Donations

Valley Robotics Program greatly appreciates any kind of donations, including in-kind donations. Any items listed in the spreadsheet above are great options.

Additional items VRP would be grateful for include but are not limited to:

- Tools
- Organizers
- Food
- Stock
 - Square/Rectangular Tubing (6061 Aluminum)
 - Thunderhex (7075 Aluminum)
 - Hex (7075 Aluminum)
 - Round (7075 Aluminum)
 - Plate (Polycarbonate, 6061 Aluminum, Steel, Acrylic)
- Hardware
- Machinery for Aluminum and Wood Fabrication
- Travel
- Anodizing/Spray Painting/Powder Coating

If there are any items that are believed to be useful to the organization and are not listed above, please reach out to Valley Robotics Program.

Current Assets

Item	Approximate Value
Manual Mill	\$2500
Manual Lathe	\$1250
Toolbox	\$600
3D Printers	\$1500
Belt Sanders	\$225
Miter Saw	\$230
Parts Stock	\$500
Electronics Stock	\$2500
20' x 24' Workspace	N/A

Sponsor Benefits

\$15,000+ Title Sponsor

- Tournaments: Company/Individual announced with team name
- Shop: Logo displayed at the VRP Shop
- Merchandise: Large logo printed on any VRP-branded merchandise (excluding polos)
- Website: Banner & link on sponsorship page & logo on the front page
- Demonstrations: Demonstrations or presentations available upon request
- Letters: Thank you note from VRP students
- Updates: Monthly organization updates available upon request

\$5,000-\$14,999 Platinum Sponsor

- Shop: Logo displayed at the VRP Shop
- Merchandise: Medium logo printed on any VRP-branded merchandise (excluding polos)
- Website: Banner & link on sponsorship page
- Demonstrations: Demonstrations or presentations available upon request
- Letters: Thank you note from VRP students
- Updates: Monthly organization updates available upon request

\$1,000-\$4,999 Gold Sponsor

- Merchandise: Small logo printed on any VRP-branded merchandise (excluding polos)
- Website: Photo & link on sponsorship page
- Letters: Thank you note from VRP students
- Updates: Monthly organization updates available upon request

\$200-\$999 Silver Sponsor

- Merchandise: Company name listed on any VRP-branded merchandise
- Website: Photo & link on sponsorship page
- Letters: Thank you note from VRP students

Contact Information

Media

Website: <https://valleyroboticsprogram.org/>

Email: andrew@valleyroboticsprogram.org

Facebook: <https://www.facebook.com/profile.php?id=61561121054922>

Instagram: [@ValleyRoboticsProgram](https://www.instagram.com/ValleyRoboticsProgram)

Discord: <https://discord.gg/rcdEWp9QHb>

Main Contacts

President: Andrew Fechter

Email: fechter715@gmail.com

Phone: 630-777-5017

Vice President: Benjamin Levine

Email: levine.benjamin.24@gmail.com

Phone: 480-639-7527

Secretary: Ashley Faucher

Email: alfie.f@hotmail.com

Phone: 206-498-8422

Sponsorship Information

Checks should be made payable to Valley Robotics Program.

Valley Robotics Program will send a Donation Receipt.

Mailing Address

2566 South Quaintance Street, Gilbert Arizona, 85295