

Do it Yourself:

GRANT WRITING (AND MORE)



BROUGHT TO YOU BY:



Written by: 5414 Students, Andy Nguyen & Misha Golubev

TABLE OF CONTENTS



I. Sustainability

Sustainability in FIRST

Registration Cost Breakdowns & Rookie Teams

Risk Analysis

Smart Spending

II. FIRST Opportunities

Rookie Teams

Texas Teams

General FIRST Opportunities

III. Finding Sponsors and Grants

Eligibility

Grant Bank

Grants vs. Sponsors

Local Opportunities & Non-Monetary Sponsorship

IV. Grant Writing

Tips to Write Grants

WOW Factors

Quantifying Impact

Return on Investment

V. Follow Up and Sponsor Relationships

Update & Engage with Sponsors

Turning Donors into Sponsors

SUSTAINABILITY

Sustainability in FIRST

As an FRC team with a community of students dedicated to bettering FIRST, it breaks our hearts when we find statistics like these:

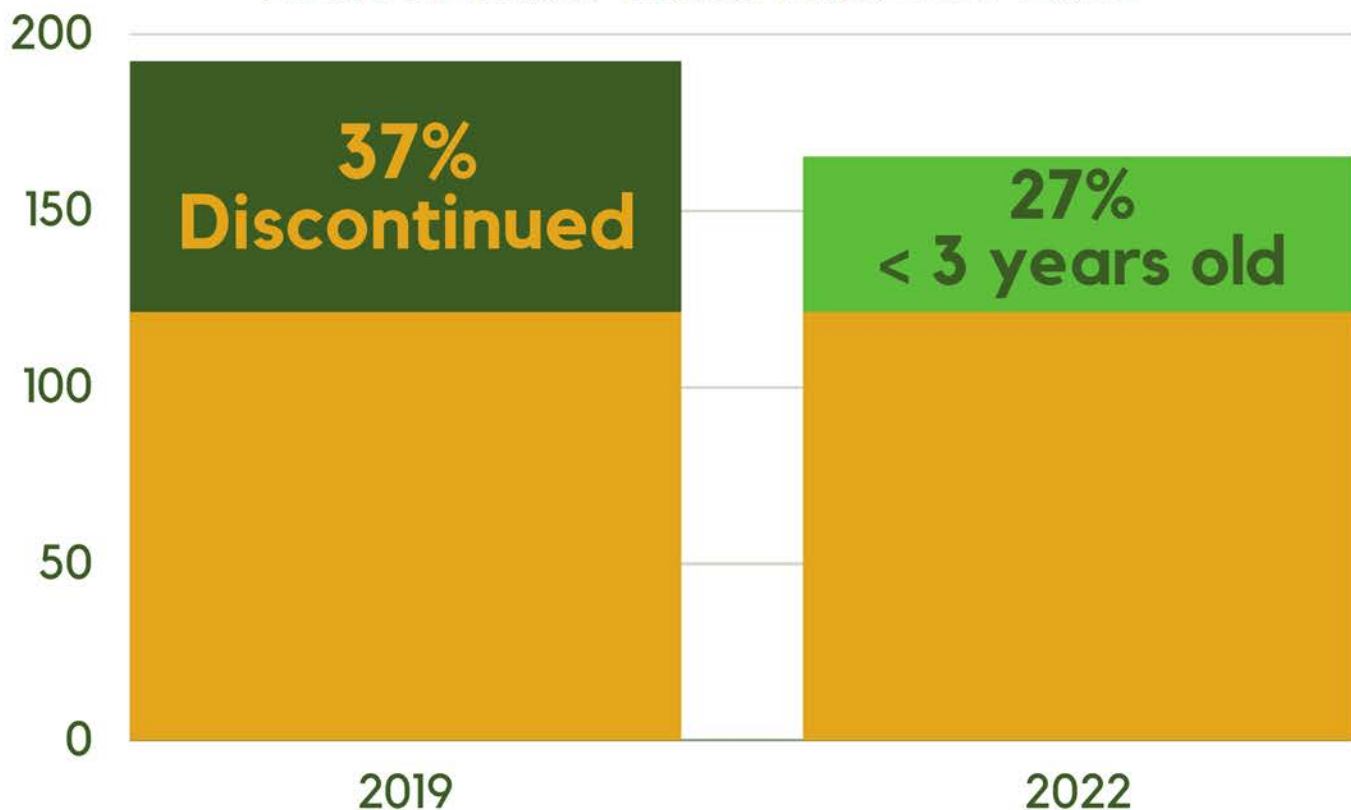
only 63% (121/192) F.I.T. Teams from 2019 exist in 2022

27% (44/165) F.I.T. Teams in 2022 are < 3 years old

We understand that "spreading FIRST" is not the same as sustaining FIRST. Though its important to make robotics and STEM as accessible as possible, to as many communities and schools as possible, its not feasible to quickly expand such a demanding program and expect it to self-sustain immediately. Encouraging teams to start only to leave them with a possible lack of resources (experience, teachers, finances, etc.) is irresponsible, unsustainable, and counterproductive to the goal of making FIRST accessible.

The purpose of this document is to specifically address one critical factor to why teams do not survive year by year. We feel this information and encouragement should be shared freely between all of FIRST because the opportunities for funding is not scarce, but can just be inaccessible.

FIRST in Texas Teams from 2019-2022



Registration Cost Breakdowns & Rookie Teams

FRC REGISTRATION REGIONAL MODEL

REGIONAL EVENT PARTICIPANTS

<i>FIRST</i> Events - ALL REGIONALS	Registration Fee	Payment Due Date
Rookie (1 Regional Event)*	\$6,000.00	11/15/2021
Veteran (1 Regional Event)**	\$5,000.00	11/15/2021
Additional Regional Event(s)***	\$3,000.00	01/31/2022
<i>FIRST</i> Championship (pre-qualified <i>FIRST</i> Robotics Competition Teams)	\$5,000.00	01/31/2022
<i>FIRST</i> Championship (in-season qualifying <i>FIRST</i> Robotics Competition Teams)	\$5,000.00	Email provided to <i>FIRST</i> Robotics Competition team upon qualification with payment due date and terms

FRC REGISTRATION DISTRICT MODEL

DISTRICT EVENT PARTICIPANTS

<i>FIRST</i> Events - ALL DISTRICTS	Registration Fee	Payment Due Date
Rookie (2 District Events)*	\$6,000.00	11/15/2021
Veteran (2 District Events)**	\$5,000.00	11/15/2021
Additional Inter-District Plays***	\$1,000.00	01/31/2022
District Championship****	\$4,000.00	See below****
<i>FIRST</i> Championship (pre-qualified <i>FIRST</i> Robotics Competition Teams)	\$5,000.00	01/31/2022
<i>FIRST</i> Championship (in-season qualifying <i>FIRST</i> Robotics Competition Teams)	\$5,000.00	Email provided to <i>FIRST</i> Robotics Competition team upon qualification with payment due date and terms



Detailed definitions, including eligibility for recognition and specific incentives can be found here



Separation/Combine Rules

Rookie Team

- 0, 1 or 2 full time mentor(s) with prior FIRST Robotics Competition experience AND
- Less than or equal to 5 student participants with prior FIRST Robotics Competition experience
- Eligible for the New Team Grant

Non-Rookie Team NOT formed from a Separation or Combine

- More than 2 full-time mentors with prior FIRST Robotics Competition experience OR
- More than 5 student participants with prior FIRST Robotics Competition experience
- NOT formed from a Separation OR Combine
- Eligible for the New Team Grant

Non-Rookie Team formed from a Separation or Combine

- Created from a Separation or Combine
- NOT eligible for the New Team Growth Grant



2014



2023

Risk Analysis

Of course, though the focus of this manual is financial sustainability and grant writing, FRC teams face hundreds of challenges and responsibilities to maintain for success. Below is how we analyze risks with a SWOT chart.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Feeder Programs (lots of interested students)	Low mentor:student ratio	Parents' companies (potential sponsorships)	Weak connection with school district and teachers
Build Space/Machinery	Lack of independent funding	Located in Houston, an area with many strong teams nearby	Loss of experience (experience concentrated in one class due to COVID)
Diverse community	Solidified team culture (due to lack of in-person offseason)	Train students before high school by mentoring feeder teams	Lack of multiple, diverse sponsor companies

RISK: Lack of funds, risk of shutting down

MITIGATION: We have students actively reaching out to companies from diverse industries for sponsorships and grants. By inviting them to events such as our open house, Girls Get Together, and competitions, we maintain close ties and constant communication.

RISK: Lack of district representation, risk of losing facility

MITIGATION: We interact with our district—our superintendent and 20 teachers accompanied us to competition to see how much their help has allowed us to grow. We formed a deeper connection by starting FIRST pipeline teams with the district and helping run their STEM camps, to which they rewarded us with a \$250,000 renovation to our facility.

RISK: Lack of interested students, risk of shutting down

MITIGATION: We created a Pipeline through our school district to garner interest in robotics and frequently participate in school-wide events. We send an email blast to district parents, leading to audiences of 50-100 people at our open houses.

Through using a SWOT/risk analysis and action plan we not only know what we need to focus but also what we have resources for. It is important for all team members to understand the SWOT of their team so they can be more involved with actively practicing sustainability. As Brene Brown says in her book "Daring Greatly," If you want to go fast go alone, but if you want to go far go together. We urge all teams to be dedicated to teaching their students the importance and intricacies of how FRC teams are run, and if it is helpful, create a SWOT/risk analysis of their own.

Smart Spending

As we have seen, money is not the one resource lacking in many teams. Experience is one of the most valuable yet rare assets to a sustainable team, and contributes to how your team spends your money, a scarily finite resource. Andrew Hartnett and Kara Boyer, Pearadox's key mentors and long standing alumni of FRC, emphasize the importance of assisting rookie teams not just by showing them how to get money, but by taking the time to explain what to buy, how to shop, and where to go to practice smart spending.



EVERYBOT

This QR Code links to FRC Team 118's (Robonauts) Everybot Website. The Everybot is an annual project by 118 to create an affordable yet elegant robot for the current years game. From 118, "Everybot can be built with nothing but basic tools and items found in either the kit of parts or purchased from your local hardware store or FRC retailers, such as AndyMark and VEXPro." Everybot was designed using the Kit of Parts (sent by FIRST and included in registration fee for rookie teams) + \$1,000



SPECTRUM \$1,000

FRC Spectrum 3847 created a list we have used in assisting rookie teams on what starter tools to buy for their team on a \$1,000 budget. The list was created generally with Everybot in mind.



SPECTRUM \$10,000

FRC Spectrum 3847 created a list for teams with an extra budget to use to upgrade their tools, machinery, and work space.



FIRST's Budget

Additional to Spectrum's lists of how to spend on tools and robotic components, FIRST created an FRC Budget for rookie teams found here. Grants often require team budgets, so this can be useful if your team does not already have a budget table.



FIRST Robotics Competition Budget for ROOKIE TEAMS (9th - 12th grade)

Assuming an average team size of 20 students

FRC Rookie budget	MAXIMUM BUDGET	MID-RANGE BUDGET	MINIMUM BUDGET	COMMENTS
FIRST national registration fee and PNW District registration fee – Includes 2 district events, Kit of Parts, etc. 2015/16 fee. May change for 2016/17 season.	\$10,900.00	\$10,900.00	\$10,900.00	No additional charge for district championship for teams that qualify
Team uniforms	\$400.00	\$300.00	\$200.00	
Shipping robot	\$500.00	\$400.00	\$300.00	Most teams transport their robot by borrowed or rented trailer to district events.
Tools	\$1,000.00	\$900.00	\$800.00	Does not include tools purchased previous year
Laptop	\$800.00	\$600.00	\$400.00	
Pit Construction	\$300.00	\$250.00	\$200.00	
Additional electronics parts - motors, wires, lights, etc.	\$500.00	\$450.00	\$400.00	
Fabrication materials: aluminum, polycarbonate, etc.	\$3,500.00	\$3,200.00	\$3,000.00	
Materials to build practice field elements: wood, metal, etc.	\$500.00	\$450.00	\$400.00	
Safety Glasses	\$100.00	\$100.00	\$100.00	
CAD design/printing	\$100.00	\$100.00	\$100.00	
Office and Marketing supplies ex. outreach events, buttons, handouts	\$600.00	\$550.00	\$500.00	
Fundraising materials e.g. spaghetti dinner fundraiser	\$800.00	\$700.00	\$600.00	
Travel Costs to two District Events/District Championship	*travel costs	*travel costs	*travel costs	Because travel expenses vary widely they are not included in this sample budget
Total:	20,000.00	\$18,900.00	\$17,900.00	Excluding travel

* Travel cost planning – Teams will have varying transportation, meal, and lodging expenses depending on the distance to the event locations.

PNW District Events in Oregon have historically been held in Wilsonville, Philomath and Oregon City. The PNW FRC Championship has historically been held in Portland or Cheney, Washington. Based on your location, your application should include estimated travel costs to two district events. These travel costs could include up to 8 meals per student, 2 or 3 days of lodging and transportation costs. You will have additional travel costs if your team qualifies for the district championship or the world championship.



FIRST's Budget

FIRST created an FRC Budget for veteran teams found here. Grants often require team budgets, so this can be useful if your team does not already have a budget table.



FIRST Robotics Competition Budget for Veteran Teams (9th – 12th grade)

Assuming an average team size of 20 students

FRC Veteran Budget	MAXIMUM BUDGET	MID-RANGE BUDGET	MINIMUM BUDGET	Comments
FIRST national registration fee and PNW District registration fee – Includes 2 district events, Kit of Parts, etc. 2015/16 fee. May change for 2016/17 season.	\$10,900.00	\$10,900.00	\$10,900.00	No additional charge for district championship for teams that qualify
Shipping robot	\$500.00	\$400.00	\$300.00	Most teams transport their robot by borrowed or rented trailer to district events.
Tools	\$200.00	\$150.00	\$50.00	
Laptop	\$100.00	\$50.00	\$0.00	Accessories for existing laptop
Pit Construction	\$100.00	\$50.00	\$0.00	
Additional electronics parts - motors, wires, lights, etc.	\$300.00	\$200.00	\$100.00	
Fabrication materials: aluminum, polycarbonate, etc.	\$1,500.00	\$1,000.00	\$1,000.00	
Materials to build practice field elements: wood, metal, etc.	\$300.00	\$200.00	\$100.00	
Safety Glasses	\$50.00	\$25.00	\$0.00	
Team Uniforms	\$200.00	\$150.00	\$50.00	
CAD design/printing	\$100.00	\$100.00	\$100.00	
Office and Marketing supplies ex. outreach events, buttons, handouts	\$200.00	\$100.00	\$50.00	
Fundraising Materials e.g. spaghetti dinner fundraiser	\$700.00	\$600.00	\$500.00	
Travel Costs	*travel costs	*travel costs	*travel costs	Because travel expenses vary widely they are not included in this sample budget
Total:	\$15,150.00	\$13,975.00	\$13,150.00	Excluding travel

* Travel cost planning – Teams will have varying transportation, meal, and lodging expenses depending on the distance to the event locations.

PNW District Events in Oregon have historically been held in Wilsonville, Philomath and Oregon City. The PNW FRC Championship has historically been held in Portland or Cheney, Washington. Based on your location, your application should include estimated travel costs to two district events. These travel costs could include up to 8 meals per student, 2 or 3 days of lodging and transportation costs. You will have additional travel costs if your team qualifies for the district championship or the world championship.

FIRST Opportunities

We understand how frustrating it can be to navigate through FIRST's many websites, links, and resources for grants. In this section we compiled a list with accompanying QR codes for grants offered specifically through FIRST (FTC & FRC) and FIRST sponsors for rookie teams, First in Texas teams, and all general FIRST teams (as of 2022). Keep in mind most FIRST grants' have a small window of opening, and are offered most frequently in the fall and offseason.

Rookie Teams



Department of Defense (DoD) STEM

The Department of Defense offers some good FRC Sponsorships, with an emphasis on Title I schools and ones directly impacted by the military. Their grants typically require you to have a DoD mentor. For more information please contact info@dodstem.us.



NASA Program Growth Grant (*as of 2022*)

Covers registration for team's district events, can be awarded twice
Grant Requirements: In United States, Intended for (not limited to) teams in their first 2 years of FRC

Required Documents: (Specifics provided in QR code)

Letter of support from your educational institution sponsor

Once awarded, NASA has several requirements required

Grant Application closes in the fall (you may "win" this grant until after the registration payment deadline. If this happens to you, call FIRST Finance and let them know that you have applied and are waiting to hear back.)

Texas Teams



FIRST in Texas (FIT) Grants

FIT provides a universal "TEAM GRANT APPLICATION" that opens in the fall. Scan the QR Code to see FIT's grants website. Listed below are the available grants FIT offers (as of 2022). If you fill out the "TEAM GRANT APPLICATION" FIT will consider you for every grant you are eligible for. Keep in mind many grants have specifications on what you can spend the awarded money on, or "Allowable Costs."



Texas Workforce Commission (For FRC & FTC)

Grant Requirements: high school age, living in Texas

Required Documents: (Blank copies provided in QR code)

W-9 Form: A simple form containing your Tax Identification Number

TWC Roster: Document containing proof that a student is in grade 9-12 and lives in Texas

Sales Tax Exemption Form: required from TWC FTC if choosing vendor credit

Money Awarded:

FRC: Veteran Teams \$1,000

Rookie Teams \$4,000

FTC: Veteran Teams \$400

Rookie Teams \$1,000



Texas Active Rookie Partnership (TARP Grant) (For FRC)

Grant Requirements: 4+ year Veteran team partnered with a Rookie team for a full build/competition season for 2 years

Required Documents: (Found through first QR Code)

Filled out "TEAM GRANT APPLICATION"

Money Awarded:

Veteran Team: First Year \$1,500 (end of season)

Second Year \$4,000 (end of season)

Rookie Team: \$2,000 equipment/materials grant (beginning of season)

General FIRST Opportunities



FIRST's "Fundraising Toolkit"

FIRST provides a video collection of advice for fundraising, access it by scanning this QR code.



FIRST's "Team Grant Opportunities"

FIRST provides a collection of grant opportunities from their sponsors at this QR code, which is updated periodically. The times of the year where FIRST has the most grant opportunities listed is before kickoff/season starts.



NASA Sustaining Grant (*as of 2023*)

Short-term assistance for teams who lost primary sponsor(s)
Intended for qualified Veteran teams on the verge of disbanding
Grant Requirements: In United States (one-year, one-time grants)
Required Documents: (Specifics provided in QR code)



BAE Systems FIRST Grants (FLL, FTC, FRC)

Open July - September



"Find Local FIRST Support"

Program Delivery Organizations partner with FIRST to operate FIRST Programs in each community. This QR code leads to a website with more information, and a space to enter your location and find the partners in your area! (Some partners can put you in contact with companies willing to sponsor FIRST teams, so definitely give this a try!)

FINDING SPONSORS AND GRANTS

Eligibility

-Non-profit status - Certain grants will require non-profit status in order to apply to them. It is possible to register your FRC team as a non-profit organization in order for tax exemption and access to more grants. (Companies are also more likely to sponsor you if it's tax deductible)

-You are more likely to get grants that align with your team's interest, ex. inclusion, tech innovation, teaching youth, outreach, diversity, imagery, etc. Make sure to seek grants that suit your team well ahead of time and apply to them.

-Many grants require employees from their company. Try surveying your team for what companies your parents may have connections to.

-Reach out to local companies for a sponsorship, local companies are some of the most likely to respond and are more likely to offer in-kind donations.

-Go to STEM-related events where your team can meet up with potential sponsors. A potential sponsor may be interested in your team's initiatives and outreach events.

-Setup your own open house for potential sponsors. Open house is a great way to present and advertise your team to companies who may be willing to sponsor your team.



Grant Bank



STEM Grants for Non-Profits

STEM Grants has a lot of K-12 stem grants, but often has more competition than ones exclusive to robotics.



Collins Aerospace Grant

Collins is an aerospace contractor and provides grants to many STEM aligned organizations.



Benevity Causes Portal

Register to have access to many grant/charity applications.



Vex Robotics Grants

Vex catalogues many robotics grants on their website and catalogues some additional advice.



REC Foundation Grants

The REC Foundation stores a wide collection of unique grants which can be very beneficial to rookie teams.

Grants vs. Sponsors

We first want to clarify the difference between grants and sponsors.

Grants

Grants are applications offered publicly or privately, often times with specific eligibilities,

- go through mentors and parents
- local companies are more likely to sponsor/local chains like Walmart, apply to all locations
- companies your team has connections with
- ask school district
- funding for specific projects > general team (magazine)
- importance of marketing and branding

Sponsors

Sponsors are brands or companies that pay to be represented by your team and organization.

- handled by mentors or parents
- can be from companies your team has connections with or from other STEM companies
- funding for the team as a whole
- renewed yearly
- logos of team sponsors will be displayed on team robot, website and/or shirt



Local Opportunities and Non-Monetary Sponsorships

In-Kind Sponsorships: It is possible to request things other than money through sponsorships. For example, if you get a sponsorship from a local bakery, it is possible to request something like cookies or cake for an event.

Other Examples Include:

- welding, powdercoat, printing, food, travel, shirt printing, school giving room, etc local service
- advertisements
- sponsoring specific events, ex. AR workshop + smallcakes + home depot
- open house/local recruitment events, interact with community
- parents/mentor's

What We Recommend:

-Machinery and materials are a must! CNC machines and things to supply them can be very expensive, try seeing if local companies will donate old machines or surplus parts/sheets.

-Food! This isn't *that* important, but its a good way to keep people engaged at events without having to foot the bill of paying for a dinner. If a company like Pizza-Hut agrees to sponsor you, it might be a good way to feed a lot of people at your events while saving money.



GRANT WRITING

Tips to Write Grants

-Try to include personal experiences in your grants. Potential sponsors reading your applications are human, your application will be more memorable if you bring up experiences or details unique to your team.

-Organize a meeting in person. It can be a great way to establish a relationship with a sponsor, especially if they can visit your robotics room in-person, as they can get a sense of your robotics team in a way photos can't convey.

-Make sure to be personal and not over-inflate any details in order to apply. Try to present yourselves confidently but honestly, as it's likely that if companies catch on to over-inflated numbers or claims, they may be dissuaded from accepting your application.



WOW Factors

Finding WOW factors as a rookie team can be hard. Your team can try to implement some of the following:

-Convey a personal experience with robotics; what have you done before? What kind of experience do you have? Do you want to do something ambitious with your STEM skills? Why do you want to do Robotics? These are just some of the questions that you can try asking your team members in order to get some personal narratives.

-Share ideas and goals. If you don't have any current initiatives or outreach events planned, try bringing up what you want to do with the money. For example, you can say that you are planning to organize a STEM summer camp for children in your district.

-Point out a need for a FRC team in your community. A lot of communities won't have robotics teams currently and that's a niche you can fill. Mentioning the amount of potential and talent on your team, as well as the need for a FIRST team in your community can really persuade potential sponsors.

*Having an impact is always important, make sure to emphasize that by funding your team, you are creating an **impact** in your local community!*

Quantifying Impact

Being able to quantify your team's impact will help you apply for grants and sponsorships. Giving sponsors and grantors tangible data will give them a better sense of how your team runs and the current state of it.

-Try to digitalize everything on your team. Instead of having physical sign-in and -out sheets, try to get your team to record attendance online. That way, whenever a sponsor asks for how many hours your team has attended meetings, your team has those numbers already stored online. One such way of digitalizing is using Microsoft or Google forms as an attendance form.

-Keeping a database of information at hand is essential. Have someone who stores your team's statistics, such as your team's financial balance, the number of hours members have volunteered for, and the number of sponsors or teams who've helped you or attended your events. Collecting information is important but is useless if your team has nowhere to store it. Information can be stored with Microsoft Excel or Google Sheets, and information collected from Microsoft or Google forms can be exported into Excel or Sheets respectively.

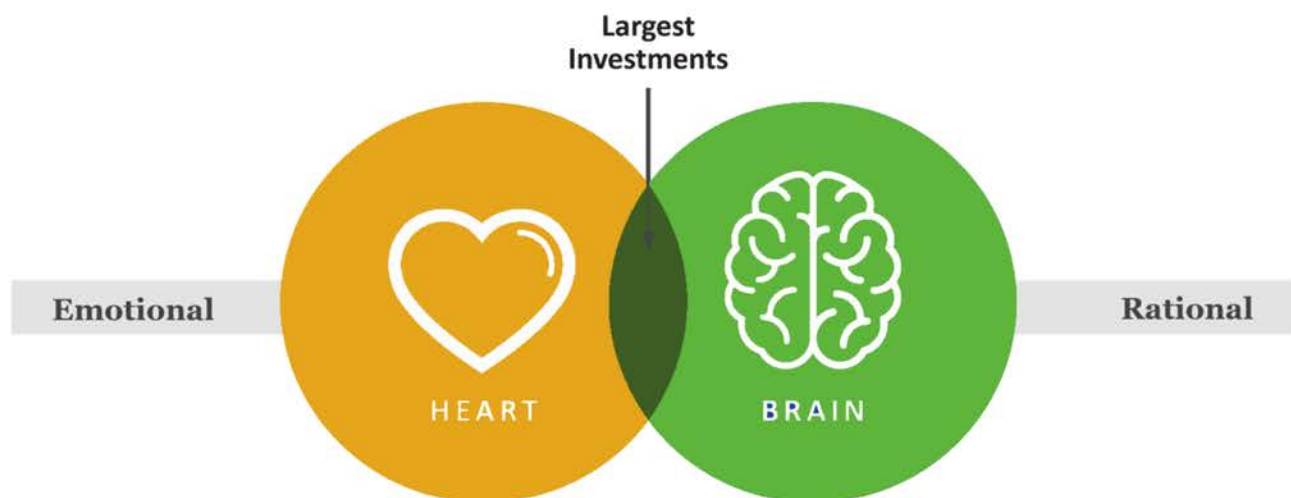
Return on Investment:

Most grants require some sort of Return on Investment (ROI) proof, or in other terms, they want proof that them giving your team money isn't a waste of money. Proving ROI as a non-profit can be more difficult, as it cannot be easily measured with things like profit margins. While this doesn't seem great at first, it can actually be in your favor as it allows you to measure ROI in your own terms.

-If the company offers products that your team can use, it could be a point to bring up. For example, if your team wants a grant from AndyMark, bring up how your team will purchase parts from their company and bring up the emotional impact aspect previously stated. Make sure to point out the benefits for both the company and the future of the team.

-Try conveying emotional impacts. "Giving is an emotional act." Try combining personal experience from your team members with a larger more logic-based approach about what this money will allow you to accomplish. Try to appeal to pathos, having a strong emotional impact could be what differentiates your team from another that's just as technically skilled.

-Companies are investing in **THEIR** future. Members of a sponsored team will view their sponsor more positively, as well as being more educated in STEM. Additionally, funding will provide students with knowledge and skills, which provides independence and agency. In turn, this makes students more productive members of society and makes them more able to positively impact and contribute back to the sponsor. For example, as Pearadox is a team sponsored by NASA, many students on the team have gone on to Intern and work there, such as one of our former team members, Abbey, who went on to become a spacesuit engineer at NASA.



FOLLOW-UP AND SPONSOR RELATIONSHIPS

Update & Engage with Sponsors

-After receiving a sponsorship, send a Thank You note to them, thanking them for the sponsorship. Try to make the note personalized, as this will make your team all the more special.

-Keep sponsors up to date on the status on your team. Whether that's team achievements or new team initiatives, it's good to update your sponsors on the success of your team. You can send this information to them in a letter or email, or even make a video that showcases your activities, achievements, and milestones to share with them and possible new sponsors.

-Hosting an Open house at your facility is great, not just for attracting new sponsors, but it's also amazing for inviting your sponsors to see your robotics room, showing sponsors how their money has positively affected your team.

-If your team is planning on hosting an event, invite sponsors to your event. Inviting sponsors helps your team fundraise for events, meaning bigger and better events for attendees. Attendees are sure to love even bigger events, these events could be used to attract even bigger sponsors and grants in the future.

Turning Donors into Sponsors

Great! A company donated to your team, now what? A donor is fundamentally a sponsor who doesn't expect something in return. However, sponsors will often pay more than donors; sponsors may expect advertising in exchange for their money. Many FIRST events are widely televised, and you can utilize this to your advantage.

Companies want promotion of their brand, and by sponsoring your team they may end up on shirts and robots which will be seen during competition events. Make sure to put sponsors on your team shirts, robots, and website. Try having tiers of sponsors, where the more they give, the bigger their logo or level of advertisement. This will incentivize companies to sponsor your team in greater amounts, ultimately helping your team grow to the top!