

# 5327 B Girl Powered



The term “Girl Powered” refers to both girls and boys working together without any individual's ability being limited by anyone. It is the definition of girls being able to do what they want in the STEM field without worrying about anyone's judgement.

However, “Girl Powered” does not include the decrease of participation in STEM from boys. The goal of this word is to give equal opportunities to both genders. Everyone must strive to achieve this goal in the STEM field as it can increase the advancements in the world, bringing new people and new perspectives to STEM.



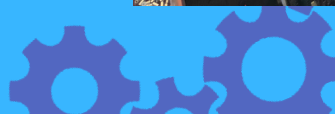
I started VEX last year, when I was a freshman. I had worked with LEGO Mindstorm and python previously, and I realized that I loved to be involved in the designing, building and coding process of robotics. My role in this team is mainly building and writing in the notebook. During the two years of being on a robotics team in VEX, I have learned about how to make a award winning notebook and how to build an optimal design for the robot. 5327 B emphasizes maintaining a proper notebook in order to keep track of the progress we have made on our robot. After working diligently on both our robot and our notebooks, our team won the Excellence Award. I was truly proud to have contributed to this success for our team as I knew that we all had worked excessively for numerous nights to achieve this and that we would keep working hard to improve our robot. Through this experience, I learned how to work well with a team.



## NIRUPAMA SURAVARJJALA

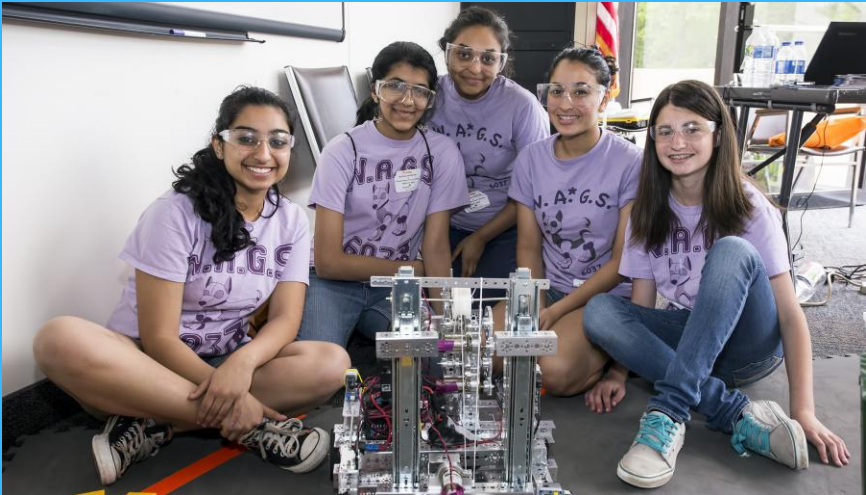
This is my first year of VEX robotics as a freshman. I have done FLL for 4 years prior where I learned many about how robotics works. I knew since then that I really enjoyed to be involved in the designing, building and coding process of robotics along with my team. My role in team 5327B is notebooking, building, and also cading. From the start of the season, I have learned about various types of mechanisms. I also learned how to work well with others. Because of how well we work as a team, we won the Design Award. 5327B stresses on the importance of accepting new ideas and perspectives. Due to all of these innovative ideas, our team won the Design Award.

In school, I am taking the elective Intro to Engineering Design. This is where I learned the whole design process which I implemented when brainstorming for VEX.



# Girl Scout Robotics

We wanted to give back to the community because we felt that if we didn't use our skills to help others, we could not reach our full potential. We also noticed that the number of girls in robotics competitions were disappointingly low. To tackle these problems we decided to help Girl Scouts earn their robotics badge. This way, we would be able to inspire young girls to join the STEM field, which would make the robotics field more diverse. We taught them the basics of designing and building a robot, how our robotics team worked, how robotics helped society with their inventions, and explained to them what careers they could pursue robotics.



**"Only 9% of leadership roles in the engineering field are taken up by women."**  
-National Science Foundation

**We plan to change that by inspiring other girls to join various STEM fields.**

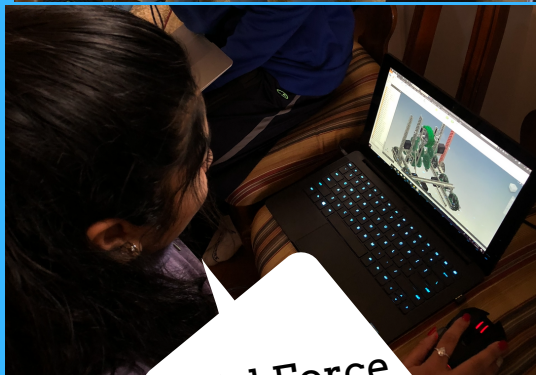
# First Lego League



We used to do FLL and there was one team that wanted feedback, so they came to us in search of good feedback. They came over and presented and we gave them feedback, including what do to in real judging situations. These students are waiting to be in VEX when they are old enough. We also explain how to brainstorm properly by including everyone's ideas. We use this design process in our team also. We all gather around the whiteboard and contribute ideas, and build upon others ideas to have the best solutions. We make sure to include everyone's ideas, not exclude any, and make sure that no ideas are criticized.



# Gael Force Academy



Here we are teaching some GFA members how to CAD

Girl Force



Another way we were able give back to our community was by teaching less experienced people in VEX how to improve in robotics. In our school, we created Gael Force Academy where people who don't have experience in VEX can meet.

We would come to Gael Force Academy and teach them about different types of mechanisms that they can use for this year's competition. This way we were able encourage more people to join competitive teams in VEX robotics. In GFA, we were able to gain four new members into our very own team. Through GFA, we saw the potential in these members which prompted us to expand our team.

# Our Roles

On 5327B, we make sure that all of our team members are included in our design process. In order to do this, we have to work with different people's strengths and weaknesses. Many people on our team have already taken engineering courses at school.

I have taken Computer Science and Principles of Engineering. This is why I started both coding and building the robot. However, something that I didn't know how to do is CAD the robot. Through VEX, I was able to learn a new skill which is being able to design the robot on a computer. Just like me, many other people on 5327 B were able to gain new skills by trying out new things because of VEX robotics.



## YOGA

This is my first year of VEX robotics. When joining the team first, I have already learned how to CAD because of the engineering course I am taking at school which is Intro to Engineering Design. However, throughout the year I gained knowledge on the engineering notebook and everything it includes. This has helped me learn how to maintain a proper engineering notebook. Because of documentation and working well with our team, we earned the Excellence and Design awards.

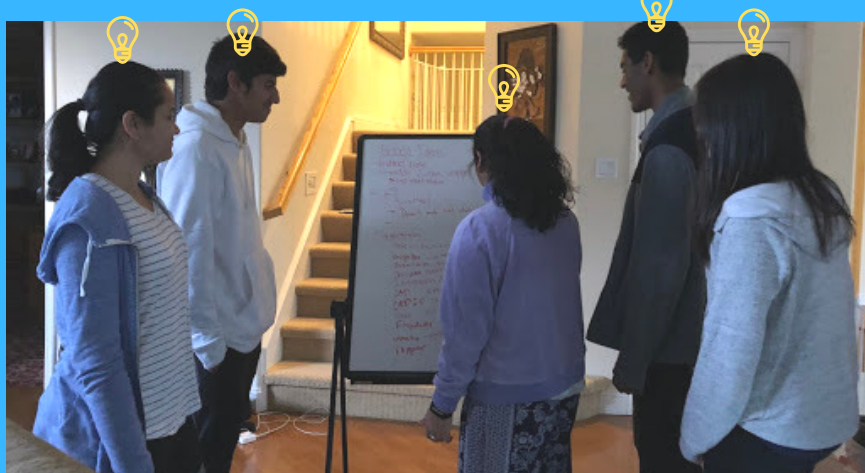


## NIRU

# Diversity and Contribution

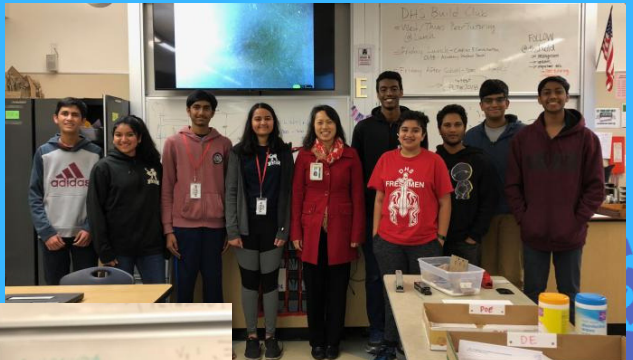


At one of our competitions, a judge asked us, “How is it working with so many members on your team?” On our team we have 13 members. Each of these members helped us gain more perspective into our design process. We all have different backgrounds, helping us come up with the best ideas. Everyone on 5327B makes sure to take everyone’s ideas into consideration, expanding our view on the solutions we can come up with. Having people with different perspectives makes our robot change and evolve throughout the entirety of the season.



# Our Role Model

Our role model in engineering is Ms. Chou, an engineering teacher at Dublin High School. She is the head of the engineering academy. The engineering academy is a program in our school that encourages students to pursue occupations in engineering and gives opportunities for all students to gain more engineering experience. In the earlier years, the engineering academy had a majority of males and less female engineers. However, Ms. Chou changed this and was able to help make the ratio of female to males 1 to 1 this year. She also teaches Digital Electronics and Principles of Engineering. She is very dedicated to the goal of promoting equality in the engineering workforce. She is our role model because she shows us that you can contribute to the engineering field, regardless of your gender.



# Further Impacting the Community

As you can see, we are trying to impact our community as much as we can. We volunteer to inspire girl scouts because we want to create a more inclusive community with a more diverse community. This is because we realize that a more diverse set of people will lead to a diverse set of ideas. As we've mentioned before, only 9% of leadership roles in engineering are occupied by women" (National Science Foundation). So what can we do to change this? We can show other girls that engineering can be an inclusive place with all different types of people. We have already shown you how we currently inspire others to join the engineering field. Once we make it to worlds, we can show people that a team with an inclusive environment can accomplish a lot. The growth of diversity in the engineering field is very closely related to the growth of new ideas. There is no she in team, there is no he in team, there is only a team. In our team, 5327 B, we stress that it is very important to be accepting of all people from different backgrounds.

