Girl Powered

Inspiring the Next Generation of Female Engineers

Team 7983Y

Last year we had eight members of our SWE club, including three seniors who have graduated now. Two of our robotics team's members, Georgia and Jillian, are shown at the far left of the picture. This year, Georgia holds the position of Secretary and Jillian the position of Treasurer.

When we hear the phrase "Girl Powered" we think of our SWE (Society of Women Engineers) club at our school and our event that we hosted. The event that we hosted is for younger girls at the middle schools in the area to get them interested in the different STEM fields. At last year's event we featured a female engineer from Chevron as our guest speaker and had different stations where the girls were able to build little machines, look at microscope slides of various plants, mix together compounds to make a homemade bouncy ball and drive robots. This event is a great opportunity to talk to young girls about their place in engineering and empower them to chase after their STEM oriented hobbies and passions. To us, "Girl Powered" means encouraging and empowering the next generation of female engineers.

One of our team members, Georgia, volunteers with their former middle school and helps to encourage young boys and girls to continue on with their passion for building, designing, and coding robots. At Olive Knolls Christian School, the program encourages girls to be a part of robotics, and has had all girl teams in the past. Many of these girls go on to pursue robotics in high school and some of them even attended our SWE event last year and the years prior.

On our team we make an effort to encourage new ideas and make others feel safe and welcomed sharing their new ideas. Brainstorming is a major part of the engineering design process and part of brainstorming is sharing the crazy ideas that come to mind. We all agree that even if the idea is a little far-fetched, there may be aspects or even new concepts to learn or take away from the shared ideas.

In preparation for last year's SWE event, we built several robots that had basic driving functions. Luckily, we had the help of several guys from our robotics team that were more than happy to help. It was really encouraging as freshmen to see our guy upperclassmen reaching out to our club and supporting us in helping young girls learn about female engineers.

In order to help give our team members who are newer to robotics some experience, our robotics team has been able to experience all the different aspects of the club. We have all taken part in idea sharing, sketching, building, etc. Despite Covid-19 our team has successfully collaborated in a safe way and we have taken time to try out new designs that would be risky during a normal year full of competitions.

An inspiring female in STEM is Cassidy Elwell. She has taken part in SWE and is an alumni from Centennial High School. She was a part of the robotics program while she attended Centennial. She now goes to Cal Poly as a computer engineer where she specializes in cybersecurity and digital forensics. As a computer engineer, she designs and develops systems that combine software and hardware. These skills can be used to develop a smartphone's operating system or apps that use the cloud. Her specialties in cybersecurity and digital forensics help protect computer systems and examine digital devices to solve cybercrimes. She is extremely passionate about enhancing the security and safety of others through technology.

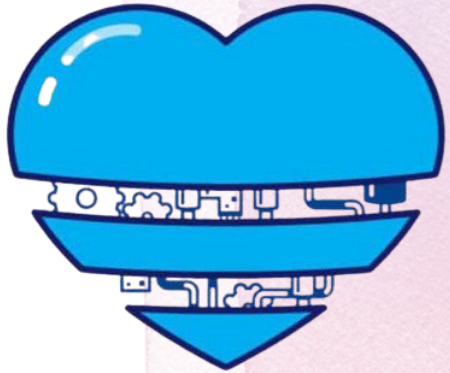
Seeing her success and passion during the years she did robotics at Centennial as well as her accomplishments in college has made myself want to join the robotics program. Though I had no experience with the subjects surrounding robotics beforehand, knowing Cassidy has made me curious as well as eager to learn and try my best to succeed in robotics, which led me to look into a future path in STEM. Her strength of will in a male-dominated environment has sparked determination in me to continue my path to make a difference.

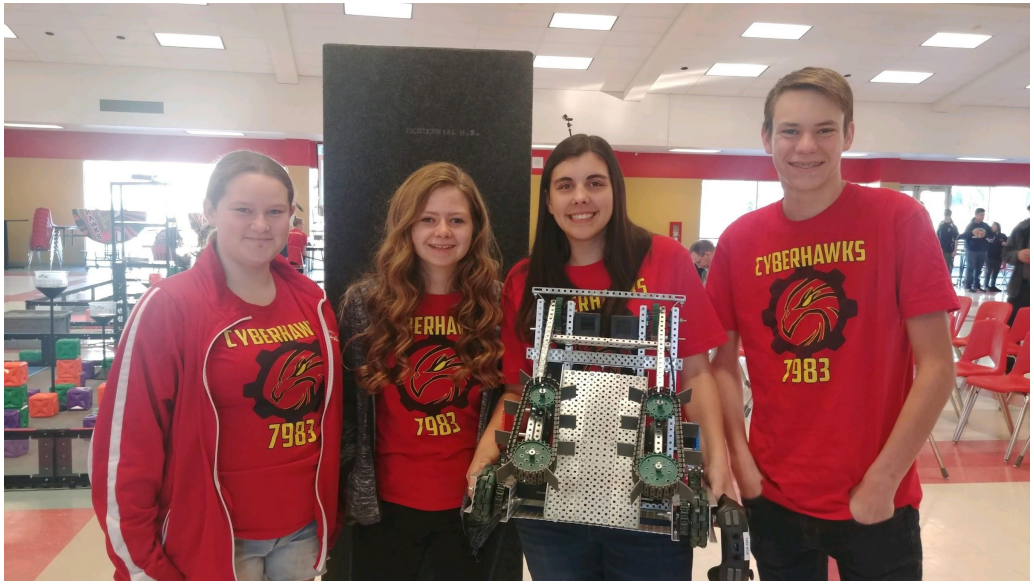
Cassidy Elwell

Listed below are our robotics team members and their main roles.

- Wyatt Greene: programmer
- Georgia Tabar and Jillian Perez: designers
- Topanga Carroll: builder
- Isabella Quintana: head of the notebook.
- Daniel Oslund: driver/builder

Despite these roles, our team shares all responsibilities and are encouraged to try out any role they have interest in.





This is a picture of Topanga, Georgia, Jillian, and Wyatt (in name order) at one of Centennial's hosted tournaments last year.

When we started this year, we weren't sure who would fill each role on our team except our programmer, Wyatt, who has years of experience. During the first few weeks, we all brainstormed and came up with possible designs for our first robot. We mainly took designs mostly from Jillian and Georgia. We have recently decided to revise our robot, with our roles more figured out, we can progress faster. We have learned who is most proficient in which role. The majority of our team members are girls, most of which are part of the PLTW engineering program at Centennial. This program has allowed us to have practice building a robot, testing it, and making any improvements we would need. We have also learned that absolute, assigned roles are not necessary for success, but instead by working together on multiple parts of our robot is easier and more beneficial.

The diversity of each member's perspective on robot designs is one of the best things that helps us choose the best design possible. Having a diverse team and allowing everyone's ideas and thoughts to be heard is what allows for a successful robotics season. There is no such thing as too many ideas or stupid ideas, every idea counts and should be discussed within a team. Despite the role of designers filled by Jillian and Georgia, every member of our team has a say in whether we pursue a certain design or idea.

Credits

Entrants: Jillian Perez, Daniel Oslund, Georgia Tabar, Isabella Quintana, Topanga Carroll, Wyatt Greene

Team Number: 7983Y

Title of Submission: Girl Powered: Inspiring the Next Generation of Female Engineers