

Girlpowerment— Empowering Girls through Robotics & Giving Us a Voice via S.T.E.M.

By Jeanelle Reyna and Victoria Fisher of Team 99808A from NOVA IQ ROBOTICS

Girl Powered means a lot of special things. To us, it means working hard to make our *own* dreams come true. It is about girls who can aspire and dream without limits, and support others to do the same. Girls can be whatever they want, and the Girl Powered initiative helps them believe it can happen. Girl Powered is about empowering girls to make the world a better place for *everyone* in it.



NOVA IQ Robotics is a middle school team that has 2 elementary school girls, Jeanelle and Victoria, and 2 middle school boys, Jesse and Caleb. We are all friends and military dependents so we all know what it's like to have a parent deploy and can support each other through hardships. Our main goal as a team is to constantly learn from our mistakes, get better over time, and have fun in the process. We are an inclusive team because we believe that different ages, genders, and backgrounds make us stronger.

Everyone contributes in their own special way. We all have a lead role in our team, but we all work on brainstorming, designing, building, driving, programming, and writing in the engineering notebook. No matter what, our voices are always heard because we think that everyone deserves a chance to speak and contribute.

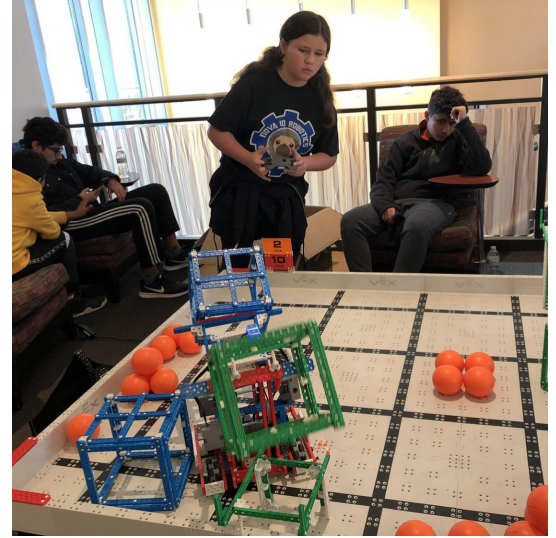


When it comes to building and designing, we all brainstorm what we want on our robot and we decide together whether or not our ideas will be a good addition or improvement to the robot. It doesn't matter what grade we are in, what gender we are, or how much experience we have- we all listen to each other's voices in robotics. We believe that this standard should be applied in all areas of life.



When it comes to lead roles, we like to choose our roles based on what we are best at. Jeanelle is the **Notebook Captain**, and is responsible for maintaining the notebook and organizing it. She writes in it the most because she enjoys technical drawing and project management. Her secondary roles are building intakes, arms, and lifts, and design troubleshooting. This is her third year in robotics and she loves being a part of a Girl Powered Team.

Victoria is the **Team Captain** because she is always kind, responsible, and calm. This is her first year in robotics and she is learning very quickly. As a builder she helps with the anchoring and improvements on the robot. Her favorite part about robotics is driving the robot and she likes practicing different scenarios. Jeanelle and Victoria form one of the drive teams and enjoy working together because they are both organized and focused.



Jesse has the most competitive robotics experience and operates well under pressure so he is our **Drive Captain**. He is responsible for coaching the other drivers, creating strategies, and communicating with teamwork partners. As a builder he is our subsystem and drivetrain specialist.

Caleb is new to robotics and is our **Programming Captain** because he really enjoys troubleshooting and is very patient and persistent. He is responsible for coding all of our teleoperated and autonomous programs and maintaining our updates, wiring, and sensors during the build process. Caleb's secondary role is driving as a skills and teamwork driver along with his drive partner Jesse.

What we like about our team is that it empowers girls by giving us leadership roles. We learned that we are all our best when we work together and combine our strengths to maximize our contributions. When someone is currently leading and teaching, for example, when Jeanelle is running a tournament evaluation, we all take turns to talk about our individual



opinions. When we are leading the meeting we make sure all voices are heard and respected no matter what. This ensures that our whole team feels included and valued. We listen to each other and use our different perspectives to come to an agreement on what we want to do from there. By taking turns leading in our special areas of interest we learned to respect one another's ideas and we also learn a lot about leadership skills, managing others, and keeping our team focused.



We really like being a diverse team with blended age levels, backgrounds, genders, experience levels, and cultures. It gives us different perspectives that can expand our viewpoints. By having new members we learn a lot by teaching them techniques we have learned through trial and error in the

past. By sharing what we know about robotics to our new members, and listening to their questions, we found new solutions together that work even better.

Since we are all friends our team chemistry works very well. Some of us are shy and quiet, and some of us are loud and outgoing, and this combination helps bring out a balance between all of us. Our outgoing members are learning to stop and listen, and our shy members are talking more since our voices are prioritized. This makes us successful because as one group with all the same ideas, our robots would stay the same, and be boring, and our team wouldn't be as fun as it currently is.

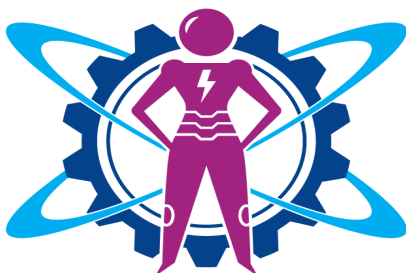


Our STEM role model is Camille Schrier. She is Miss Virginia 2019, and one of the reasons she became Miss Virginia was by conducting a science experiment as her talent. She went on to become Miss America 2020. She traveled throughout the state of Virginia promoting STEM education to inspire girls to pursue careers in STEM. We are from Virginia, and we are proud that Miss America was from our state. Camille Schrier attended Virginia Tech and double majored in systems biology and

biochemistry. For her talent, she showed her audience catalytic decomposition of hydrogen peroxide, otherwise known as “elephant toothpaste.” She inspires us to follow our dreams, and to make sure our voices are heard. By using chemistry to wow her audience she made history and inspired girls all over the country, and hopefully all over the world.



We think that Girl Powered helps everyone recognize what girls have to say, and empowers everyone to have a voice. Our team is a mix of girls and boys, but in the end we all work together to collaborate on how we think our team should work. By listening, leading, and learning we can all succeed in making our dreams come true.



Credits:

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