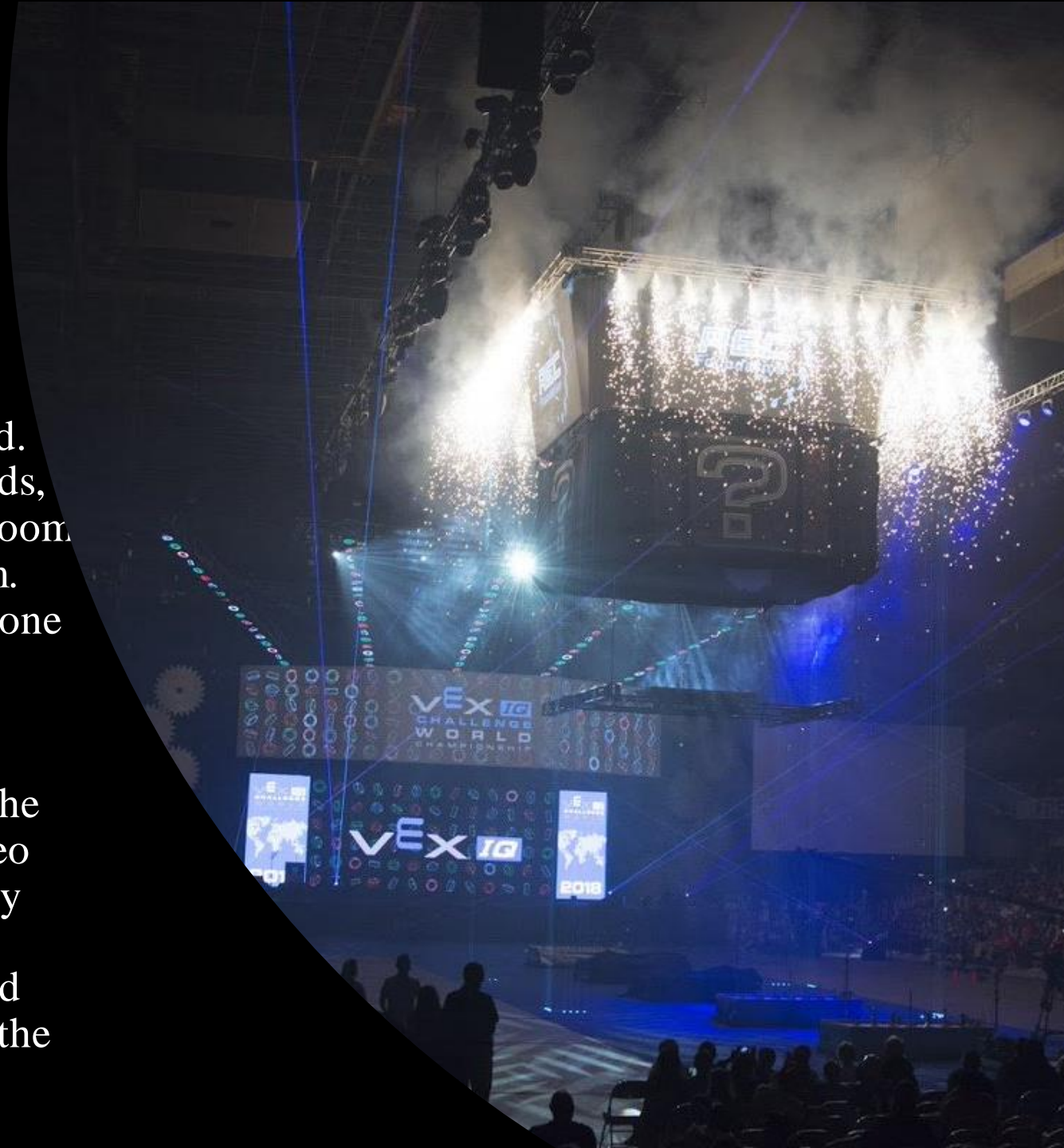
The background features a pair of golden, mechanical dragon wings spread wide. The wings are intricately detailed with gears, rivets, and ornate scrollwork. Behind the wings is a large, dark, circular emblem with a complex, symmetrical design, resembling a stylized sunburst or a mechanical gear. The entire scene is set against a solid black background.

# **Mechanical Dragons: Soaring through Robotics**

# Vex IQ 2018 Worlds Championship

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Screams filled the air as a resonant BOOM sounded. Fireworks erupted in Freedom Hall at Vex IQ Worlds, 2018. A white field descended to the center of the room, drawing the attention of everyone in the auditorium. As blinding white lights focused on the field, everyone gasped, observing the colorful pieces. “Ladies and gentlemen, I present to you, the 2018-2019 Vex IQ game, Next Level!” As the announcer said this, the screens at the front of the arena began playing the instructional video for the new game. Once the video ended, we immediately turned to each other, already filled with ideas for next year’s game, and eager to begin the new competition season as a Girl Powered team with an aspiration to inspire and give back to the robotics community back home.







# The Start of a Girl Powered Team

Our journey into the world of competitive robotics started last year, when we participated in the 2017-2018 Ringmaster game. Although our team is slightly different this year, the determination, perseverance, and the flow of innovative ideas that define us remain the same. With our previous experiences, we've realized the potential girls can have in the STEM fields and learned the true meaning of the phrase "Girl Powered". We've incorporated our discoveries of what makes up a Girl Powered team to work more effectively, create an outstanding robot, and to help inspire others to join us on this adventure.

# Our Development

As we've progressed through the season, we've grown, discovered unknown strengths and weaknesses and learned so much because of robotics. We've all tried several different roles, until we found an arrangement that worked for everyone and allowed everyone to learn. However, some roles are still a team effort, such as designing, which allows for diversity of ideas, and driving, which demonstrates all our hard work. Overall, we've soared in our knowledge, abilities, and passion for robotics throughout this adventure.



[http://blog.objectiflune.com/wp-content/uploads/2013/07/shutterstock\\_green-growth\\_71322319.jpg](http://blog.objectiflune.com/wp-content/uploads/2013/07/shutterstock_green-growth_71322319.jpg)





Kelly – I'm the team captain, and I program driver control, co-build, and am partially in charge of the notebook. I also used to program autonomous, but felt like I had taken on too much, and was glad to give others the programming role, and to have Ann join me in engineering and recording. I've learned a lot about leading and programming through robotics.

Elizabeth – I'm an autonomous programmer and am in charge of the STEM project. I've also tried writing notes, but found that I was so wrapped up in what I was learning and discovering that I couldn't handle it all. I often incorporate what I know about other fields into my programming, such as programming the robot to follow the driving strategy.

Helena – I'm a programmer on the team, though I also sometimes help on the notebook and engineering, to get a feel for all parts of robotics. Trying new roles has helped me program, because I understand the parts of the robot better, allowing me to think of the best programs based on the robot's strengths and weaknesses.

Ann - I write the engineering notebook, and is a co-builder. I've tried the role of programming, but realized that it was difficult to do so many tasks at once. However, I still help contribute to the programs when my teammates are busy. I've learned a lot about not only how to build a good robot, but also how to properly record what we accomplished at each meeting.

# What DOES “Girl Powered” Mean?



<https://www.robotevents.com/images/girl-powered.png>

Our understanding of “Girl Powered” evolved as we continued through our robotics journey. To us, “Girl Powered” means being inspiring, giving back to the community, persevering through obstacles, building a diverse and inclusive culture in robotics, and thinking out of the box. We applied these Girl Powered values in our daily actions, which have helped us become stronger engineers individually, a more effective team, and influence and inspire the robotics community in our school.

# Inspiration

*“We believe that being Girl Powered is not just about growing and succeeding as a team or an individual, but as a community. We’re so glad that our coach inspired us to join robotics, and love to pass that passion on to others. Our success in getting to Worlds as a first-year robotics team has influenced many students in our school, especially girls, and the number of students in our school's robotics club has doubled this year to over 150 students. Another way we’ve shared our passion is by volunteering at various robotics events and talking about our experiences with elementary students. We’ve found that soaring on our own is great, yet, we love to soar with our community much more, and to inspire others to share the same passion that we have for robotics.”*

~Helena



**Middle Schools in LWSd | Planning ahead for 2019-20**

Neighborhood schools & Choice schools for incoming middle schoolers 

Neighborhood schools	Choice schools	2019-20 Choice School Application & Registration Timeline:
All of the district's neighborhood schools offer rigorous academic programs and unique opportunities for student learning. Attend the upcoming information night to learn more about the neighborhood middle school that your student will attend next year. Dates are listed on the back. <b>Learn more about each school:</b> <a href="https://www.lwsd.org/schools/middle">https://www.lwsd.org/schools/middle</a>	Choice schools are open to all students who reside in the district. Enrollment is lottery-based. Students must apply online to be considered for enrollment in the school. Attend the upcoming information night to learn more about the school you're interested in attending next year. Dates are listed on the back. <b>Learn more about each school:</b> <a href="https://www.lwsd.org/schools/choice-schools">https://www.lwsd.org/schools/choice-schools</a>	<b>12/10/18</b> - Application available online <b>1/18/19</b> - Applications due by 4 p.m. <b>2/1/19</b> - Lottery held at district <b>2/8/19</b> - Notification letters mailed <b>2/22/19</b> - Acceptance deadline

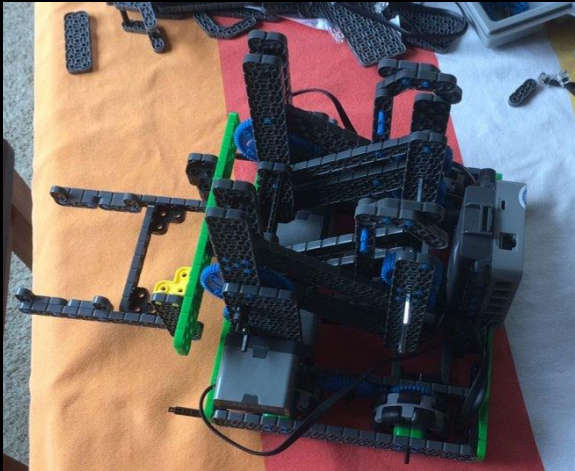
One of our pictures from Vex IQ Worlds 2018, used by the school district on middle school information flyers



# Perseverance

*“We teach ourselves and others to learn from mistakes, and to never give up when facing failures or obstacles. I think that being Girl Powered means to persevere past challenges and to come up with creative solutions to accomplish our goals. As an autonomous programmer, I often have to try multiple strategies before finding the best one for the robot. If I gave up, I wouldn’t be able to succeed. Most of our ideas fail, but we’ve learned to keep persisting until we find a solution. The sense of confidence and pride after we’ve persevered past obstacles is priceless”*

~Elizabeth





# Diversity & Inclusion

*“We are diverse in our unique personalities and perspectives. The diversity in our characters help us envision different ideas for each problem we face. Our team chemistry is decided by our different perspectives and ideas. We each have our own strengths and weaknesses, which we utilized to decide our roles on the team and our different opinions on all parts of robotics. At the same time, we build an inclusive culture where everyone is heard and suggestions are discussed. It is the diversity and inclusive culture enabled us to choose the best solutions for our robot and to build a very effective team.*

~Ann



# Thinking Outside of the Box



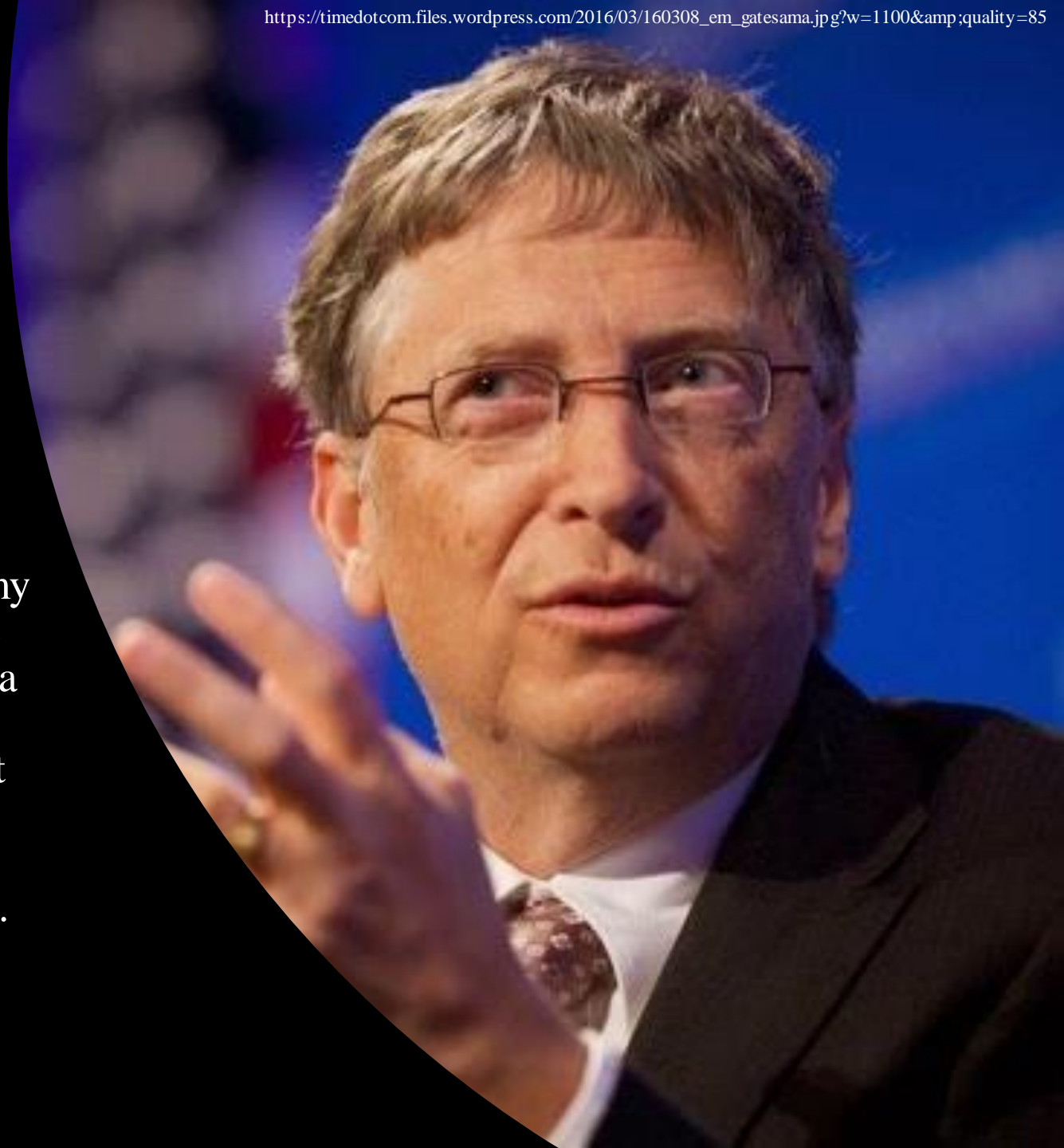
*“Thinking outside the box is important because it is the only way to do new, revolutionary things. All great leaders in tech did something others didn’t expect them to do, which made them stand out. Girl Powered means doing things the unconventional way, and doing it well. Our team worked on our problems the unconventional way. For programming, we looked at the source code, then tried to improve on it. We noticed that the robot veered and didn’t just try to work around it by adjusting numbers. We tested, then found ways to improve. Our robot also demonstrates our originality, with our unique ideas we’ve tried in robot development.”*

*~Kelly*

# Our STEM Role Model: Bill Gates

We are inspired by our STEM role Model, Bill Gates, for several reasons. He's a leader who exemplifies the value of "Girl-Powered" through his actions.

Gates is keen on inspiring and giving back to the community. He's local, and much of our local economy depends on Gates and Microsoft. Gates has helped the high speed development of the Greater Seattle area to a high tech hub. The Gates foundation is world's largest philanthropy organization, through which he has spent billions of dollars to help with world health issues, bringing equality to women all around the world, and enabling more girls to be educated in the STEM fields.





# More About Bill Gates



Microsoft has gone through up and downs, such as the Vista fiasco, but under Gates' leadership, the company persevered, and was the world's most valuable company in 2018.

Gates has been very supportive of women and other minorities in Microsoft and the tech industry. Because of his work towards equality, Microsoft is well-known for its diverse and inclusive culture.

Gates built Microsoft by thinking outside the box – he would even take one week every year away from his work, friends, and family to look at everything from a higher level, which he found helped him think of innovative ideas.

We look up to Bill Gates and his accomplishments, because we feel empowered and inspired that we can make as big an impact on the world as he has.



# Conclusion

We've learned so much about being Girl Powered, and it helps us during robotics. We find that we can work and solve problems so much more effectively by acting on the Girl Powered values. In addition, we've all grown a passion for robotics, and love being a part of VEX IQ's competitions, where we can explore and try new things within the world of robotics. It's been great to include and inspire others in our community to join us in robotics so not only can we soar as a team, but soar as a community.

# Credits



Team: 47G

Title: Mechanical Dragons: Soaring through Robotics

Team members:

Elizabeth Chen

Chengying (Ann) Li

Kelly Lin

Helena Zheng