

TEAM 12J: "BEEP BOP"

Our team was formed in 2016, originally four sophomore girls, all new to robotics. The lab was monopolized by males, with females severely outnumbered, and we were quickly exposed to the prejudiced realities of being women in STEM. Competitions entailed questions about the "rest" of our team's whereabouts, our abilities constantly doubted, successes attributed only to "flirting." That first year wasn't easy, but we made it to Nationals, backed by a female coach and a far-reaching community of women in STEM.

Our team has since only grown, becoming more Girl⁺Powered with each additional member. Our second year of robotics was marked by qualifications for Virginia States, the U.S. Open, and the World Championship.

THIS YEAR IN ROBOTICS

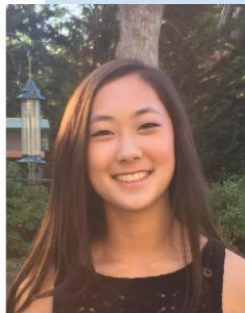
This year our team has focused on a well rounded robot that efficiently toggles flags, flips caps, and can mount the platforms. We have gone through various designs, our final being a flywheel with a 7:1 ratio on two 200 rpm motors with polycarbonate backing to shape the trajectory of the path. Additionally, the back of our robot consists of a simple cap flipper with a prong mechanism. We raised the wheels using altered bearing blocks to allow more surface area to grip the sides of the platforms. Our inspiration for our ball intake came from the game last year. We use a similar rubber band roller intake with a 3:1 ratio. Our programmers have utilized a gyroscope and potentiometer to help with the accuracy and efficiency of our programmer skills and autonomous. Along with our robot, our team has focused on many initiatives to encourage women in STEM.

MEET OUR TEAM



Hollis Cutler is our team captain. Primarily a builder, designer, and journaler, she has been a member of our team since 2016. Out of school Hollis plays varsity squash and lacrosse, and spends her free time in the ceramics classroom.

Jun-Young Hong is our main programmer and driver, but spends a lot of time building as well. Out of robotics she plays varsity soccer and squash, and runs the Inlight magazine and A.S.I.A. club.



Anna Takis is a builder, designer and drive coach for our team. Out of robotics, she is a member of the Science and Engineering Research Concentration, and helps to lead admission tours on campus.

MEET OUR TEAM



Eleanor Nuechterlein helps journal and program our robot. Out of school, she is a steward, meaning that she helps with the admission process on our campus. She is also a dedicated musician, playing both violin and piano.

Kylie Fischer is a crucial programmer and designer. She is an avid athlete in and out of school, playing soccer and basketball. She is a math and science tutor for younger students in her free time.



Margaret Taylor helps design, build, and program. Outside of robotics, she enjoys playing the French horn, singing in chorus, and playing goalie for our school's field hockey team.

Ellie Yoon is a programmer, strategist, and helps plan the autonomous. She uses her problem solving skills from VEX IQ to tackle the difficult tasks in this year's game. Other than robotics, Ellie also plays clarinet and volunteers to help people with disabilities learn how to swim.





such as Potomac School in Virginia for their petition.

Immediately Grant the Afghan Girls' Robotics Team Visas to Compete in a Tournament Held in Their Honor

Created by W.B. on July 08, 2017

Visas for Team Afghanistan

In the Summer of 2016, an Afghan girls robotics team was denied US entry for a competition. Our shared identity as women in robotics prompted our team to take action. After creating a *We The People* petition through the White House, we were faced with the daunting task of garnering 100,000 signatures in 30 days. We turned to social media, our generation's most powerful tool, for signatures and publicity. Utilizing Facebook, Instagram, Twitter, and Reddit, among others, our petition was signed and shared thousands of times before the Trump Administration intervened and agreed to grant VISAs.

The dedication of team Afghanistan was inspirational. Advocating for the team caused us to reflect on the role that robotics plays in our own life. Robotics gives us an outlet to express our creativity, experiment, and foster innovation. Unfortunately many girls are unable to experience the transformative potential of robotics because they are deterred from the STEM field from an early age. At Potomac, we founded a club, Fem 'N STEM, with the mission of encouraging all genders equally to pursue passions in the sciences. Working with younger students, we hope to instill confidence and love for STEM before stereotypes set in.



Our Club: Fem n' STEM

During the Summer of 2017, we decided to start Fem 'n STEM, a program with our Middle School that aims to change the stereotypes around women in STEM. We design activities that foster younger students' passion for STEM in a positive and inclusive environment as well as provide female role models for them to look up to. Watching their thrill of deepening scientific understanding each month--whether with lava lamps, magnetic slime, or stomp rockets--makes us confident the stereotype around women in STEM will soon change.

Our Plans for the Future

We dream of expanding the club across communities, seeing the same excitement on a larger scale. With funding, we would love to incorporate aspects of our other activities, such as computer science and robotics. By extending the idea to other schools, we could spread the leadership dynamic of our own club; older students teach and run the experiments, providing role models and reinforcing the idea that gender diversity in STEM can carry far past elementary school.



Meeting Team Afghanistan

This September, we received an invitation from the State Department to have brunch with the Afghan girls. They had come to America to receive an award and hoped to meet us to show thanks for our petition. We ate in their host's apartment, laughing and sharing stories. Our experiences were both similar and different, making it apparent that each country has its own relationship with gender stereotypes in the sciences. Improving biases in STEM is an effort that expands far beyond our own community, far beyond our own country. Aided by social media and a worldwide network of women, efforts for advancement can be scaled in countless directions. The Afghan girls' lives are starkly different than our own, but we find ourselves profoundly linked by our devotion to bettering the world of women in STEM.

12J: A Team to be Reckoned With

12J has come a long way from our first day in the robotics room, where we couldn't tell an axle cap from a bearing block. Those days are a distant memory as we have added new members, welcomed many successes, and gained valuable learning experiences. Over the course of our journey we have seen first hand the impact one can make when women support each other, and all plan to continue fighting for equality.

