

WINDOW^{THE}

ACCESSIBILITY FOR ALL

In today's technology driven world, it is apparent that Science, Technology, Engineering and Math (STEM) is the wave of the future. The Maryland School for the Blind (MSB) is not only riding the wave, the school is making a big splash. With not one, but two, robotics teams competing in the FIRST Lego League (FLL), a brand new high school course in computer science, and summer programs focused on technology, the school is committed to educating students in STEM.

But how do you teach STEM when not all technology is accessible for students who are blind or visually impaired? That has been the challenge that has faced MSB's robotics teams, the DOT5UDOGS (which translates to Underdogs in braille) and the 180 Optimum (which is named after braille contractions as well as referencing angles), and their coaches for the past seven years.

"We had been competing in these tournaments at an unfair disadvantage because of an inaccessible coding program that is used by the FLL, but this year, we decided to advocate for change," according to Gina Fugate, MSB's Technology teacher and head coach.

At an EPIQ (Experiencing Programming in Quorum)

Daphne Williams and Coach Gina Fugate set up the robot for FLL competition.

conference she attended last summer, Fugate formed some key partnerships and was introduced to individuals, much like herself, who are committed to accessible STEM, but also to equality for people with disabilities. This included Andreas Stefik, who created Quorum, a programming coding language designed to be completely accessible to people who are blind or visually impaired. Fugate realized Quorum seemed like the perfect opportunity to share accessible programming with her students and "positively advocate" for accessibility with First Lego League via robotics.

"Although it was an additional challenge, the students were excited to be able to actually do the coding and programming of the robot

themselves once they got into it," said Fugate. "With the inaccessible Lego EV3 software that we had to use in the past, the students had to type out the code in a document and the coaches had to enter the programming for them. Quorum allows the students to program independently and at MSB independence is our mission," said Fugate.

As only one of three schools for the blind participating in FLL competitions in the country, the MSB teams want the same opportunities as their sighted peers. With that goal in mind, they decided to take it to the next level and advocate for the right to use the Quorum program in competitions. They began an advocacy campaign to convince Lego and the FLL organizers to let everyone use Quorum and to raise



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MESSAGE FROM THE SUPERINTENDENT & CEO

Hello and Happy Spring!

Although spring is officially here, and we are enjoying the warmer weather, it wasn't too long ago when we had snowy weather across the region.

The snow provides important learning experiences for our students. It affords our instructional staff with opportunities to teach weather related skills and lessons to our students. Our Orientation and Mobility (O&M) instructors seize the opportunity to teach travel skills to our student cane travelers. The O&M staff are like postal carriers - neither rain, nor sleet, nor snow will keep them from doing their jobs. Since weather like rain, wind and snow can actually be felt through the sense of touch, it provides a tactile experience which can be incorporated into weather related classroom lessons as well.

The cold weather also contributed to a successful season for our ski program. This student recreational program has been supported for the past 45 years by the Deep Creek Lions Club and WISP Ski Resort with assistance from local high school volunteers from Garrett County in Western Maryland. We are very grateful for their commitment and continued support!

I am also excited to share that on December 8, 2018, The Maryland School for the Blind established a Guinness World Record for the longest goalball game. Twelve athletes affiliated with our school played the game for over 25 consecutive hours. Read more about this amazing achievement on page 4.

We are looking forward to a busy spring filled with warmer weather, fun and educational activities like the Savage Race mud run, track and field meets, class trips, the spring concert, the prom and of course graduation!

I hope to see you, our friends and supporters, at some of these upcoming campus events. As always, thank you for your interest and support of our students and programs!

Sincerely,



W. Robert Hair, M.Ed.
Superintendent & CEO



STAFF SPOTLIGHT Gina Fugate – Technology Teacher and Robotics Coach



Although she brushes off the importance of her recent Science, Technology, Engineering and Math (STEM) award, Gina Fugate

really is a “Rising Star” in the eyes of her students and colleagues.

Fugate, a Technology Teacher and Lego Robotics Coach at MSB since 2015, is making a name for herself in Maryland’s tech community. She was recently named the 2019 Northeastern Maryland Technology Council’s Rising Star Visionary Award recipient for her innovative ideas and advocacy efforts in ensuring accessibility for her students in STEM.

Fugate is passionate about accessibility for all people, which stems, in part, from her personal experiences. During her senior year of college, she learned that she has Retinitis Pigmentosa, an inherited visual impairment that affects her visual field and causes light adaptation issues. This diagnosis changed her life and career course in ways she could not imagine. “When you are told that you could go blind within 10 years, it forces you to reevaluate things,” said Fugate.

After finishing her Bachelor’s degree in English Education, she worked and traveled abroad for two years, and adjusted her career plan. She decided to pursue a Masters in Arts & Religion at Yale University, with the goal of becoming a teacher. Through a summer opportunity in her old Kentucky home, and an internship at the American Printing House for the Blind (APH), she discovered the possibility of working in the field of visual impairments.

“I was fortunate to have had wonderful mentors who took me under their wing and introduced me to leaders in the

field who have influenced my life,” said Fugate. At their encouragement, Fugate enrolled at Vanderbilt University to obtain a Master’s degree in Special Education with an endorsement for Teacher of the Visually Impaired (TVI).

“I had never heard of a Teacher of the Visually Impaired, but after attending a fieldtrip with Kentucky School for the Blind, I knew that pursuing that certification would empower me to help change perceptions about blindness.

After finishing her education, she became active in the vision field in Kentucky, and later relocated to Maryland when she was offered a position teaching technology at MSB. She inherited the role of the robotics coach a year later. In typical fashion, she jumped in and learned as much about it as possible. “Once I realized how meaningful Lego Robotics and STEM experiences are for our students, I knew it was critical to continue and grow this program.” She also saw the potential to take the MSB teams to the next level in the FLL competitions.

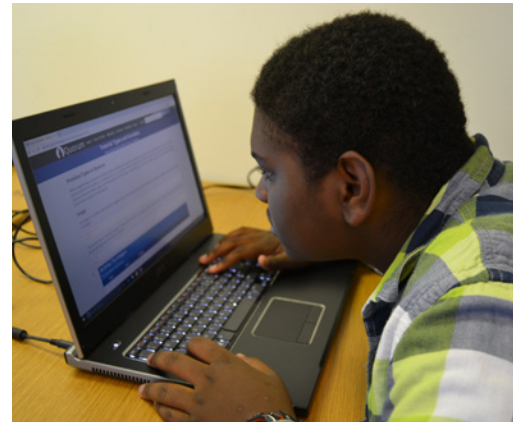
“MSB has participated in this league for the past seven years, but the Lego programming language is inaccessible to our students, which puts us at a distinct disadvantage in the competitions. As a person with a visual impairment myself, I don’t think this is acceptable. “Our students deserve the same opportunities as their sighted peers, so I see this as a great lesson in self-advocacy,” according to Fugate.

With that in mind, Fugate encouraged her students to “positively advocate” for the use of Quorum, an open source accessible programming language, which allows them to directly write and manage their own code for the robot, ensuring accessibility for all.

She truly is a role model for her students. It’s no wonder they look up to this “rising star.”

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awareness of the importance of “accessibility for all.” The team developed hashtags, which is related to coding, to use on social media and had business cards printed to pass out at events to help them raise awareness. “We even took our case all the way to the Lego headquarters in Denmark,” said MSB student, Griffin DuFauchard, who served as a junior coach for the two teams.



Jr. coach Griffin Dufauchard, using Quorum.

Another key player in the team’s advocacy efforts has been Marco Ciavolino, a leader in Maryland’s STEM community. “This gentleman took such an interest in our team that he created a product called Empower Mats, an accessible table mat with tactile overlays that our team has been able to use in the competitions,” said Fugate. “His support has been a game changer for us.”

After some initial push-back, Lego, FLL and FLL Maryland organizers agreed to let the team use the Quorum program in this year’s qualifying tournaments. It was a bit of a risky move for the MSB teams. Not only were they and their coaches new to Quorum, but there is a 15 second delay between the time the programming code is entered and the movement of the robot. In a competition, teams are given 2½ minutes to complete The Robot Game. As a result of the steep learning curve, MSB’s teams did not perform as many missions as they typically do, but students chose to advocate for Quorum and demonstrate their independence. In doing so, they scored a more important victory in the long run.



The DOT5UDOGS in the FLL competition.

Although the MSB teams did not qualify for the state finals, their efforts have created quite a buzz in the local STEM community and beyond. They have been invited to legislative events at The Maryland State House and have been asked to participate in the Maryland STEM Festival this fall. Other students they met at the First Lego League qualifiers are interested in visiting MSB and taking part in some “coopertition.”

“We are also recording an informational podcast for a National Public Radio (NPR) contest in which we explain how we use Quorum in robotics,” said Dufauchard. “Not only that, but representatives from the Lego Corporation are going to visit MSB this spring. How awesome is that?”

COMMUNITY SUPPORT

MSB sets Guinness Record for the World's Longest Goalball Game



The Maryland School for the Blind is the official Guinness World Record holder for the longest continuous game of Goalball, a sport designed specifically for the blind. Teams consisting of MSB students and alumni as well as collegiate, adult and Paralympic athletes set the record on December 7th and 8th, 2018 by playing the physically challenging game for 25 hours and 30 seconds!

There was no prior record for this sport, but the Guinness World Record organization reviewed the rules of the sport and set a 24 hour parameter for the first ever attempt upon receiving the application from MSB. The MSB organizers added an hour to the minimum requirement and set a team goal of 25 consecutive hours, which they achieved with an official time of 25 hours and 30 seconds.

The purpose of this event was to raise awareness of The Maryland School for the Blind, disability sports, unite our community, advocate for people with disabilities, and showcase the game of goalball by setting a Guinness World Record.

Special thanks go to our athletes, event committee, volunteers, sponsors and in-kind donors for helping us achieve our mission.

Event Sponsors

Asbestos Specialists, Inc. American Office	Maury Donnelly and Parr Penney Design Group
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In-Kind Donors

United States Association of Blind Athletes	Dominick's Pizza of Parkville
Image 360 of White Marsh	Olympia Restaurant of Parkville
Texas Roadhouse of Hunt Valley	

BLIND LACROSSE

With the help of our community partners, MSB has introduced the sport of lacrosse to our students.

Volunteers from **Parkville Adaptive Lacrosse, Goucher College Women's Lacrosse and Towson High School Lacrosse** have held two lacrosse clinics at MSB to teach the basics of the sport to our students and are working on methods of adapting the sport for the blind and visually impaired. STRINGKING also donated brand new lacrosse sticks for our students to use for this program. Thank you one and all!



Thank you to Mr. Harry Kumar and Olympia Masala restaurant of Parkville for sponsoring MSB Staff Appreciation Days.



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