

Greater Toronto West
2013
Regional Chairman's Essay
SWAT 771

“I want to personally thank you for your longstanding commitment to *FIRST* and congratulate your entire team of young women for their great achievements,” said Dean Kamen, founder of *FIRST*, about SWAT 771. For 12 years SWAT has proudly sculpted young women to become leaders in their community by modelling the *FIRST* ideals. SWAT girls are unafraid to dream, dare to innovate, and continually strive to inspire others.

SWAT is a student-run *FIRST* robotics team from Oakville, Ontario consisting of 45 enthusiastic young women. In the past four years SWAT has grown from only ten students and three mentors to encompass 20% of our senior school population (Gr. 8-12), and twelve dedicated mentors. All SWAT graduates go on to post-secondary education, 56% of them pursue fields in engineering. The town of Oakville recognizes many of our graduates and mentors as *FIRST* Community Heroes. Our school, St. Mildred's-Lightbourn School (SMLS) is proud of these individual achievements, and of SWAT's accomplishments as a team.

In 2010, SWAT began implementing a three year plan to allow SMLS students, affectionately called "Millies", to start their journey with SWAT from the age of four. From the moment our young Millie steps through the doors of SMLS, she is exposed to STEM. In Kindergarten, she visits the FLL and FRC teams in their respective seasons. Her class will visit the robots when taught the letter 'R' and therefore she will forever associate this letter with the word 'Robot'. As she grows up, she has the opportunity to join Junior *FIRST* Lego League in Grades 1 to 2. SWAT fostered the first Jr. FLL teams in Oakville in 2010. Since then, nine teams have gone through the program. We have worked closely with the Director

of Jr. FLL in Canada to further establish the program in our community as well as hosting our own Jr. FLL showcase this May. When our young Millie enters Grades 3 and 4, she can join Jr. FLL with the WeDo component, further enriching her Jr. FLL experience. Girls in Grades 5 and 6 work together in the *FIRST* Lego League program, and start to support the younger Millies by mentoring Jr. FLL teams and giving presentations to the Kindergarteners. SWAT has run two successful FLL teams each year since 2003, the first year FLL came to Ontario. One of these teams was documented through their *Food Factor* season on CBC, broadcasted nationwide.

As our Millie makes the transition into middle and senior school, she is able to join the newly implemented VEX program. VEX, which is integrated into the Grade 7 Science program, gives every girl the opportunity to build a robot and compete in a classroom competition. She can also be a part of the VEX competitive team, which acts as a stepping stone to the FRC program. Our Millie now has the skills to actively participate in FRC from Grades 8 to 12. When our Millie joins SWAT, she is placed into the MiniMillies program, which are small advisory groups, led by senior students, to ensure that SWAT girls grow up to be well rounded-women who are pioneers of their own future. MiniMillies establishes the sustainability of SWAT and builds strong relationships between students that will benefit them for years to come.

In addition to joining SWAT, there are many opportunities for Millies to be involved with STEM in our school community. Our Millie can join our school's STEM council, which was founded by two junior SWAT members in their first

year. In this council she will promote STEM through events such as Mole Day, Big Sister/Little Sister, Pi Day, and many other initiatives. Millies are always encouraged to extend their STEM experiences and actively participate in many enrichment programs including *Shad Valley*, *Waterloo Unlimited* and *Quantum Cryptography School For Young Students*. Finally, in our Millie's last year at SMLS, she can aspire to be a leader and role model in our school community by becoming the STEM Robotics Prefect - a new position, implemented this year.

Our Millie's 14-year journey has enabled her to accumulate a wide variety of skills that will aid her in all her future endeavours. The availability of *FIRST* based programs at every grade level, as well as multiple new possibilities to become active in STEM at SMLS, is a testament to the significant culture change at our school, where STEM is celebrated at the same level as the Arts and Athletics.

SWAT recognizes that our success is in large part due to the continual support of our sponsors and mentors. We work hard to reciprocate this support. One of our SWAT co-captains completed a one-month co-op at Hatch - one of our lead sponsors. Another contribution to our sponsors has been donating toys towards the *Oakland Ford Toy Drive* during the 2011 and 2012 Christmas season. Moreover, SWAT has hosted a *Ford Drive One 4 Ur School* for the past four years. We have also given back to our individual mentors by sponsoring them in events such as *Road Hockey to Conquer Cancer*, and *Movember*. Finally, our newest initiative has been to work closely with Cisco Systems, developing a plan to sponsor every all-girls team in Canada, as well as to help

promote women in science. Coupled with this sponsorship is an annual scholarship awarded to a girl in the *FIRST* community who exemplifies model leadership qualities on her team.

For the past three years, SWAT has hosted the largest *FIRST* Robotics Symposium in Canada. This event brings together approximately 50 teams from both Canada and the United States for a day filled with high-profile guest speakers and workshops for all skill levels. Participating members of the *FIRST* community have overwhelmed SWAT with their enthusiastic feedback. To further help teams grow, SWAT has assisted in mentoring FRC teams 3040 and 4308 through their rookie season, supporting them while they established themselves as a team before and during build season. SWAT is also excited to be mentoring two all-girls rookie teams, FRC team 4825 and team 4604, this 2013 season.

Since women are underrepresented in engineering, SWAT strives to expose other minority groups to the world of STEM. We have reached out to numerous schools, including E.C. Drury School for the Deaf, Oliver Smith First Nations school, Trillium School for Learning Disabilities and W. Ross Macdonald School for the Blind. When these elementary school students interact with the robots and learn about the world of STEM, the smiles that light up their faces are indescribable. Before we are even able to leave their schools, these kids are already hopeful for the next time our robot goes to play with them. Furthermore, we have worked with organizations such as Halton At Risk Regional Recreational Program, Canadian Association of Girls In Science and the Special Olympics Organization. SWAT has also helped start and mentor the first deaf FLL team in

North America as well as a First Nations team. These teams are two of the sixteen teams we have started in our region in the past two years, along with ten Jr.FLL, three FLL teams and a VEX team.

SWAT makes an effort to reach beyond the walls of our school to the local community. We have participated in events such as Oakville's *Midnight Madness*, *Empty Bowls*, Sherway Gardens mall event, *Yoga for Schizophrenia* and *Robots Rule* at the Ontario Science Centre. SWAT was also interviewed on *TVO Kids*, teaching children across Canada all about the *FIRST* Robotics program and demonstrating our robot. Our team has also been featured in our local newspaper five times in the past year. Through these outreach events, we have touched close to a million people. By reaching out to our local community, we are able to clearly see the impact we have on everyone we meet and help shape our neighbourhood into a better *FIRST* community.

SWAT has broken through a multitude of barriers and we are now reaching out to people on a global scale. Utilizing social media platforms like Facebook, Youtube and Twitter, we have been able share our various resources and spread awareness of *FIRST* principles worldwide. We are able to track the success of these pages through geo targeting and analytical services. We reach approximately 8 133 people worldwide every month. As one of the first teams to be established on Twitter, *FIRST* Canada approached SWAT to help them kick start their presence on social media platforms and through workshops we successfully guided them into the world of social media.

Over the past two years, SWAT has participated in numerous exchanges around the world to places like Sweden, Australia, China, Japan, Scotland, Colombia and Chile. Through presentations and demonstrations, we have brought *FIRST* along with us, touching the hearts of hundreds worldwide. We have also opened our doors to multiple exchange students during build season from places including Hobart, Perth, Beijing, Tokyo, Bogotá and Stockholm. We truly have *Girls With Wrenches* all over the world.

For four years SWAT has sponsored a young girl in Kenya named Peres through the *Because I Am A Girl* Campaign. Every two weeks a SWAT girl takes turns sponsoring and writing Peres a letter. Over these past few years, it has been remarkable to be able to follow the growth of a young girl in a third world country, giving her opportunities for the future she would not otherwise have. In 2012, SWAT also helped start the first Lego team in Cambodia. So far, this program has sparked a large interest and they hope to attend their first competition next fall. SWAT has undoubtedly become a global team.

SWAT 771 is not just a *FIRST* Robotics team. We are a group of dedicated young women who share a passion for inspiring all those around us. SWAT's impact is clear in our school, local and global communities. The flame SWAT has ignited in the hearts of thousands of people will never burn out. As said by former captain Karen Lee, "The robot is just something that I helped build, but SWAT will always be the team that built me."