

Greater Toronto Regional West
Regional Chairman's Award:
Submission Essay

SWAT 771

March 31-April 2

SWAT 771 dares to dream, is unafraid to innovate and always strives to inspire others through the opportunities presented by FIRST. We are a group of young women who aspire to be leaders in science and technology and inspire others to do the same by realizing the mission of FIRST.

The FIRST Robotics program is celebrated at our school with great zeal. In our school's most recent annual report, one of the achievements we are most proud of, as a school, was the Xerox Creativity Award from the Waterloo Regional. Both FRC and FLL have separate pages on our school website describing the program. We communicate within our team and to the all the staff and students in our school through our school email system. For parents, we send updates through our school's monthly newsletter, sent via an email blast. We inform our student body about FIRST and let them have a taste of FRC through full school assemblies, having prominent representation at the annual Club Carousel and by demonstrating and allowing our robots to be driven by students on Sports Days.

We raise awareness of FIRST Robotics within the school with both creative and didactic pursuits. One of our creative ways to involve the student body is by annually organizing the game peg attack at our school. The game is a fundraiser and players pay to participate. We have also initiated a battery-recycling program to raise awareness of humans' environmental impact. Our team has stationed battery recycling drop boxes around the school for the proper disposal of non-rechargeable batteries. SWAT has also helped organize a grade seven Engineering Day where girls participate in a creative project that incorporates a full design life cycle. Two junior members of the team were so inspired by their first year on the team that they helped to form a council that would promote science, technology, engineering and math (STEM). Before the establishment of the STEM council, the only other student councils at our school were the athletic council and arts council. SWAT has been the driving force behind a clear culture change at St. Mildred's.

We are proud to have integrated FIRST into both junior and senior school programming. All the way from grades 1-12 every girl has access to a FIRST program or to a club where she can learn and build upon skills for a FIRST program. In grades 1-2, we started two JFLL teams. The pilot was so successful that we were able to start two

more teams during the winter term. Mini Millies and Micro Millies are the first JFLL teams in Oakville. In grades 3-5, our team runs a construction club, where girls learn how to use tools and build simple structures out of wood. We also run a Lego club in those years, where they get their first taste of the FLL program to come and learn skills they will use if they choose to join an FLL team. Our FLL program hosts students from grades 6-8 and encourages them to unleash their creativity and problem solving skills. SWAT team members volunteer in each of the programs established in our junior school; by the time they graduate into our FRC program, most members are keen to mentor younger members because they recognize the importance of fostering early interest in science and technology and the impact these programs have had on them. Our promotion of FIRST throughout the school has shown clear results. In three years, our team has grown from 12 members to 50. This represents 17% of our senior school population.

We have been actively spreading the message of FIRST in our local community. For the past two years we have been demonstrating our FRC and FLL robots at the Oakville Midnight Madness event in downtown Oakville and at the Canadian National Exhibition. SWAT has helped bring an FLL program to HARRRP, a non-profit community organization in Hamilton, tailored for at-risk youth. Our Drive One 4 UR School event sponsored by Ford was not only a fundraiser, but also a community event. The event was promoted throughout the community and online. SWAT has integrated a half day program into our local kids summer day camp, SMiLeS. Each week they had a robotics day. The boys and girls ranged in ages 6-14 and the activities centered on Lego robotics and building engineering bridges and towers with Lego. This summer program was so popular we have been asked back to run a March break camp.

When it comes to local outreach, we try to reach out to those who are less-abled and minority groups. We have also brought our robot to E.C. Drury, a school for the deaf. It was a mutual learning experience for both parties; the students of E.C. Drury learned about engineering and robotics while SWAT girls learned how to communicate without using spoken words. For the past three years, we have kicked off the regional Special Olympics tournament by driving our robot bearing the Canadian flag for the opening ceremonies and during the day having a robot driving area. Being an all girls team we recognize that girls are a minority in fields such as science and engineering and we

advocate for that statistic to change. We recently hosted a CAGIS (Canadian Association for Girls in Science) meeting for girls aged 6-16. It was hugely successful and all of the girls left with a new found interest in engineering.

SWAT is also actively involved in the FIRST community. This past October we hosted a symposium of a series of workshops for teams across Ontario to expand skills for build season, team organization and coaching. Overall there were fifteen FRC teams and twenty-five FLL coaches, totaling an attendance of over 200 people.

SWAT has assumed the role as a leader in software development. One of our mentors introduced us to MapleSoft's line of software. MapleSoft agreed to give us the software to beta-test. MapleSim proved to be very useful in the initial mathematics calculations involved with our early robot designs, in the stages before we created the three-dimensional version on Autodesk Inventor. SWAT will be working with MapleSoft to make this software available to all FIRST teams in the near future.

Our school believes in global education and members of our team have utilized the international opportunities available to us to spread the word of FIRST. Our members have gone to Tokyo and Osaka, Japan to make presentations about the program. We have also made presentations to exchange students coming in from Beijing, China. Since 2007, we have striven to have at least one exchange student participating as a member of our team during each of our build seasons. We are currently preparing one of our key junior members to make a formal proposal to start a team at our sister school in Hobart, Australia.

SWAT participates in bettering of the lives of young women around the world through the Because I Am A Girl campaign from Plan Canada and also through our school's service trip to Kenya. As a team we read different articles about educating women in third-world countries and we were not surprised to discover that there is a direct correlation between supporting and empowering young women and the potential for success in impoverished communities. Each month a different team member writes a letter to Peres, a two year old girl living in Kenya. We hope that one day Peres will graduate from high school and go onto post-secondary education. Our team has raised money for educational supplies for the orphans housed at Mully Children's Family (MCF) in Kenya. MCF is a non-profit foundation that helps rehabilitate at-risk children

of Kenya and gives each child under their care an education. We have also been organizing a Lego drive within our school and local community to collect gently used and new Lego to bring to these orphans in Kenya. Our hope is that by providing these children with Lego, it will encourage and foster a positive learning environment.

The Internet has revolutionized the way we communicate, fueling globalization in a way where we can all help each other, connecting us all in a way never before possible. Our current captains saw that it was important that SWAT becomes a leader in spreading the word of FIRST on popular social media websites. They ventured out into a relatively new marketing concept called, "social media marketing". We had a parent mentor help us explore how to develop a web-presence and come up with a presentation to our Head of Senior School and also our Director of IT. The proposal's success lead to the launch of our team's Twitter, YouTube channel and newly redesigned website. We are able to track the success of these pages through cli.gs' and bit.ly's geotargeting and analytical services. We were one of the first Canadian FRC teams to launch a Twitter back in early 2009 and continue to "tweet" our progress and enthusiasm during the build, competition and off-seasons. We have visitors from all over the globe visiting our websites with 85% of our hits coming from Canada, the United States, and Britain.

SWAT up keeps strong partnerships with our sponsors. It is important that we recognize all the support that they give us. One of our lead sponsors, Hatch hosted an Inside Ride charity event and our team had volunteered to help run the event. We had a booth in their lobby to talk about FIRST and the support that their company has given our team. In the past two years Hatch has referred us to four of the most enthusiastic and passionate mentors our team has ever had. We have also built up a strong relationship with Ford. We have one mentor from Ford who is one of our team's greatest supporters. Ford has helped us machine parts for our robot. In return we helped support their company within our community by running a Drive One 4 UR School event.

SWAT 771 works continuously throughout the year to spread FIRST both locally and abroad. We work especially hard to dispel illusions and disprove stereotypes about careers in engineering for women and we won't stop until women are no longer considered minorities in fields of science.