

Chairman's Award - Team 4476

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2021 - Team 4476

Team Number

4476

Team Nickname

W.A.F.F.L.E.S.

Team Location

Kingston, Ontario - Canada

Describe the impact of the *FIRST* program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in *FIRST* programs as mentors/sponsors.

Since 2013, 100% of our students graduated high school and 100% attended post-secondary in a STEM field. 80% of our alumni volunteer in FIRST and 41% begin mentoring. Members have received employment as a direct result of FIRST participation, but impact goes past statistics. One of our 2020 alum joined us after he felt rejected by his school's FRC team due to his autism. He said through W.A.F.F.L.E.S., FIRST taught him about more than robots; it gave him a family who always looked out for him.

Describe your community along with how your team addresses its unique opportunities and circumstances.

Our student-focused culture allows us to provide opportunities that inspire. As a community team, our members come from 11 different schools - and when we went online due to COVID, we realized it was an opportunity to grow our community. While our HQ is in Kingston, ON, we now have team members from across North America. We also use our platform to make a difference by working with healthcare nonprofits, including Make-A-Wish, Kingston Community Health Centers (KCHC), and Stem Cells for Life.

Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?

We spread the FIRST message through our YouTube channel. This channel has accumulated a million views mostly stemming from our EV3 tutorials, reaching FLL teams and LEGO fans alike. To expand this, we are doing a full series of WeDo 2.0 tutorials this year to further our reach. Our LEGO and Literature workshop was also effective at introducing youth to STEM, reaching 60 kids this winter with near infinite opportunity to grow. We focus on gathering statistics to further understand our impact.

Please provide specific examples of how your team members act as role models within the *FIRST* community with emphasis on the past 3 years.

All members are involved in outreach and are active volunteers at FIRST events, with 500+ volunteer hours per year. Our team emphasizes tutorials and workshops, including running four tutorials at the FLL Challenge Ontario Kickoff event in October. We share resources through YouTube, on FIRST Canada's website, through a drop-in FLL hub, social media, and more. At events our FRC team runs a "W.A.F.F.L.E.S. Topping Crew", where our students assist other teams so they can compete at their best.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

In 2021, we Started and Ran an FTC team, two FLL Challenge teams, 5 FLL Explore teams, and an FLL Discover group. We also assisted an FLL Challenge team from Quebec with transitioning to an online model. In a standard season, we assist FLL Challenge and Explore teams through a weekly FLL Help Hub, reaching 5 teams in 2019-2020. In total, over the past 3 years, W.A.F.F.L.E.S. has Started and Ran 19 *FIRST* teams, Mentored 21, and Assisted many others.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

A new initiative of ours to inspire youth was done in partnership with *FIRST* Robotics Canada. We ran 9 sessions of a free workshop in Winter 2021 for 60 kids aged 6-10. It was free to join, and used a condensed version of the FLL Explore program. Over 30% of participants later joined FLL Explore teams. We run summer camps annually which see a 50% returning participant rate, volunteer at STEMathons, and volunteer at Pathways2Education (an after school program for at-risk youth).

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

Our partnership with KCHC connects us to low-income families; in Summer 2019 they introduced us to 18 kids who could not afford summer camp. We provided them with financial aid to attend our camp for free. We work with Queen's University to host an FRC kickoff and FLL event. They also sponsor our team and pay for our student mentors' travel expenses. Working with the Pump House Steam Museum, we used LEGO to make an exhibit for Canada's Sesquicentennial, which was seen by hundreds of visitors.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

Our outreach opportunities are often tailored to introducing *FIRST* to at-risk youth through various partnerships. Workshops and camps teach *FIRST* Core Values, which introduces EDI at a young age. 50% of our team self-identify with a mental or physical disability so we use a 1-on-1 mentor support model to ensure different needs get individualized support. We developed the Alone Together Challenge and the *FIRST* Fashion Challenge to promote inclusion during COVID in an interactive, online model.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

Progression is a main ingredient in the W.A.F.F.L.E.S. program. By having all 5 *FIRST* programs, we have a reliable stream of students who can ensure our team's sustainability. Our local outreach events are open to students of all ages, creating a steady pipeline of student recruitment. Over 55% of our FRC team are FLL alumni, and we even have 3 students who started in FLL Explore. This means our team is full of individuals who understand what is needed to develop an effective initiative.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

Sponsors often comment on their appreciation of our commitment to a mutually beneficial partnership. An example of this was working with our sponsor Venture Food Trucks, where our members helped them design a new part for truck maintenance, or when we formed W.A.F.F.L.E.S. 4 Wellness in 2020 to better engage KCHC. To recruit new sponsors, our students have the opportunity to fundraise their portion of team fees instead of directly paying, which results in a constantly growing sponsor base.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

With COVID-19, all of our team meetings have transitioned to being online and we are finding some students are struggling to engage in meetings and activities. To fix this, we are giving students tasks they can do with the support of family members to get some of the in person experience; our WeDo 2.0 tutorial series is being done by two sisters. This is also part of why we expanded to FTC, as it gives hands-on robot building experience for our new students so they can stay engaged.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

Our goals are to fulfill the mission of *FIRST* through creating opportunities that inspire. Our FRC students mentor our FLL teams and work at our summer camps to develop leadership skills while inspiring young people themselves. Our CodeAble LEGO and Literature workshops were even led by a rookie student! *FIRST* also looks to inspire youth to become STEM innovators, and since 100% of team alum graduate and study STEM in their post-secondary education, we believe that shows significant progress.

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

In response to the cancellation of the 2020 season, our team members founded an online FRC simulator league called

Second Robotics Competition (SRC). We have hosted competitions on the xRC Simulator and on Minecraft. SRC has been a unique way for the FRC community to come together, and has also worked to introduce other gamers to FIRST Robotics. There have been over 800 registrations for SRC events! More information on this project can be found at the league's website at secondrobotics.org.

Essay

OUR MISSION

How can you capture all W.A.F.F.L.E.S. Community Robotics does with 10,000 characters? It seems ambitious, but a picture tells a thousand words. Let us help you picture our team as we know it: a close-knit community truly Wild About Family & Friends Learning Engineering & Science. Who knew a group of homeschooled kids who started an FIRST LEGO League (FLL) team in 2006 would impact so many? The group grew to include their siblings through FLL Explore in 2008, and then filled a void by expanding in 2013 to form Team 4476: the first Canadian community-based FIRST Robotics Competition (FRC) team. After 9 years, we are determined as ever in our mission to ignite a worldwide flame of passion in youth for Science, Technology, Engineering, and Math (STEM).

OUR TEAM

A crucial part of our program is the people behind the scenes. We are based in Kingston, ON, Canada, but our community is global; you can be anywhere in the world to be a WAFFLE! With an online model, our team has members across North America, including from fly-in Indigenous communities, different provinces, the USA, and right here in Kingston. For 2021, we have 16 students from 11 different schools, including 6 new students.

Like polaroids, our students have the unique opportunity to develop over time through a full portfolio of programs. W.A.F.F.L.E.S. has teams in all 5 FIRST programs this year, as we started a FIRST Tech Challenge (FTC) team and an FLL Discovery group in 2021. Having programs for ages 4-18 improves our sustainability, as over 55% of our FRC team are FLL alumni. We effectively develop a passion for STEM in our students; 100% of our FRC alumni study STEM after high school and 80% stay involved in FIRST as a mentor or volunteer! Our commitment to inclusivity ensures financial need is not a barrier to joining our teams. We have provided 15 grants to FLL students from low income families since 2019, and our FTC/FRC team has a \$0 entrance fee with students instead fundraising their fees.

W.A.F.F.L.E.S. ON THE WEB

We believe it is critical to capture our knowledge and share it with others through online tutorials. We have the largest YouTube presence of any FRC team worldwide with over 5000 subscribers and 1,080,000 views in 139 countries. Our videos include LEGO Mindstorms EV3 and WeDo 2.0 tutorials, which helps FLL Challenge and Explore teams while introducing other LEGO fans to FIRST. In 2019, we were told by an FLL team at Detroit Championships that our tutorials are required viewing for their team! We have appeared on live streams 24 times in the last 3 years, reaching over 5300 viewers in the FRC, FTC, and FLL community. This year we presented 6 virtual lectures at the Ontario FLL Kickoff, the FIRST Gateway Conference, and SWATPosium. Our social media presence is growing constantly with 5000 followers across 7 platforms, 3 of which we joined this year.

FIRST INVOLVEMENT

As a role model for other teams, we are committed to having a positive impact on those inside and out of the FIRST Robotics community. This includes hosting FIRST events, mentoring, and more. We have run and hosted the Kingston FLL Challenge Qualifying Tournament for the last 10 years, which ran virtually with 13 teams this year. Since 2019 we have run 7 FLL Explore Festivals, including 3 this season. W.A.F.F.L.E.S. can be found at FIRST competitions across North America as event volunteers, with over 1200 hours spent in volunteer roles in the last 3 years. We also had mentors volunteer for the 2021 STEMathon for Girls and Allies in FIRST. We established the Eastern Ontario FRC Kickoff in 2019, which allows us to distribute Kit of Parts and host QuickBuilds for rookie teams. Our mentorship extends beyond our own teams, having mentored two FRC teams and an FLL Challenge team last year. We also run an FLL Help Hub, which allows us to assist teams on an as-needed basis. Aside from YouTube, we also publish resources like a DIY FIRST Core Values Cube!

LOCAL FOOTPRINT

We promote a snapshot of our team through demonstrations at events like Kingston's Science Rendezvous, the largest science expo in Canada, and Princess Street Promenade. W.A.F.F.L.E.S. has run a display at Science Rendezvous since 2015, allowing us to reach over 5000 people a year. While the event was cancelled in 2020, we will have the opportunity to inspire yet again in 2021. Princess Street Promenade is similar, where we promote our team and FIRST during a biannual street festival, reaching another 2000 people annually. We also participate in other local events like EngNight, STEMist Fair, and LEGONardo Da Vinci.

Our local partnerships are critical to our impact. Partnering with Kingston Community Health Centres (KCHC) in 2018, all of our programs are housed under one roof at one of their buildings. KCHC has been fundamental in helping us reach people in need, allowing us to engage these communities and ignite the flame of passion in STEM. We are also partnered with the City of Kingston, enabling us to share FIRST in our community - our FLL Tournament day is even declared as Kingston's FIRST Robotics Day! Our legal status as a not-for-profit eases development of sponsor relations, as many businesses receive benefits for working with nonprofits. Despite COVID's economic impact, our sponsor portfolio remains diverse with 80% of our sponsors returning this year and a net growth in sponsorship funds.

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CAMPS & WORKSHOPS

Since 2014, W.A.F.F.L.E.S. has run week-long summer camps. These camps inspire kids aged 6-12 by introducing them to FIRST with curriculum from FLL. We have hosted 105 campers since 2016, including 38 campers in 2019. These camps provide valuable experience as a paid job in STEM for our FRC students. These camps are funded through the Canadian government, making them a sustainable source of our team income. This includes support through CanCode, providing dedicated financial support for families in need. In 2019, this meant 18 kids from KCHC's at-risk programs joined our camps at no cost.

To adapt to Ontario's stay-at-home order, we ran 9 free online workshops this winter. The session used the FLL Explore curriculum to introduce kids to programming, robotics, and FIRST Core Values. By partnering with FIRST Robotics Canada, we promoted these workshops to a broad audience and reached 60 kids from coast-to-coast. Of these, 30% went on to register on our FLL Explore teams. For the last 2 years, we have hosted an annual Skills Carousel which has reached 23 youth. Open to new, veteran, and prospect students alike, this event allows youth to develop new skills and familiarize themselves with the aspects of a FIRST team through a variety of carousel stations.

W.A.F.F.L.E.S. VS. COVID

To serve a greater purpose, we have several partnerships with healthcare organizations that proved vital during the first wave of COVID. We used our 3D printer to make over 1000 pieces of Personal Protective Equipment (PPE) for the community as part of the 3D-PPE Kingston Group. We also initiated the "Alone Together" Challenge, which was an online way of engaging people worldwide to safely promote togetherness in hard times. Challenges included self care, giving thanks, helping others, and keeping connected from a distance. Other initiatives we did included a LEGO Quarantine Calendar, which was later used as inspiration for the FIRST Canada Build It Challenge.

After the 2020 Infinite Recharge season was cancelled, our team began a virtual FRC simulator league called Second Robotics Competition (SRC) to bring back the familiarity of the competitive season. With 35 events and 11,000 matches to date, there have been over 800 entries from 5 countries and this initiative continues to expand in 2021. This included some players who were introduced to FIRST through SRC!

#WAFFLES4WELLNESS

When a friend of our team was diagnosed with leukemia in 2014, we partnered with Stem Cells For Life, an organization that matches people in need of stem cell transplants with suitable donors. In our fight to raise awareness, we named our robot after her and have since carried on the annual tradition of naming our robot after someone in need. For the Infinite Recharge seasons, our robot's name is Tanner, after a 6 year old with sideroblastic anemia. By naming our robot after this young warrior, we shed light on the need for people to sign up for the stem cell registry. We also work with Make-a-Wish for their annual HaiRaiser event, donating 100 inches of hair in 5 years to make wigs for cancer patients.

Through W.A.F.F.L.E.S. 4 Wellness, a campaign founded in 2020, we strive to make the world a better place. Our first initiative was a Hygiene Drive for KCHC's Street Health Clinic, who works with Kingston's at-risk population to help them overcome addiction and substance abuse. Our students had dropboxes at school, mentors had them at work, and we collected items at the 2020 Durham District Event. In the end, we donated over 400 self care products to the clinic. Our newest project began when one of our members recognized attending events or meetings triggered her anxiety disorder. To take action we are creating a W.A.F.F.L.E.S. Stress-Relief Bag to help others who may be struggling. In it are healthy coping mechanisms, like stress toys and colouring sheets, to help someone centre themselves. The bag will be available in quiet rooms at events we attend, with hopes to expand in the future.

PICTURE THE FUTURE

W.A.F.F.L.E.S. aims to do meaningful work best captured in a photograph with dedication to developing accessible opportunities that inspire. Whether it be a child's face lighting up seeing their robot move for the first time, someone signing up to be a stem cell donor and save lives, or anything in between, you have to zoom out to get the full extent of our impact in just one image. We are Wild About Family & Friends Learning Engineering & Science, and everything we do, we do to help others picture a better future.