

## Chairman's Award - Team 2974

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2020 - Team 2974

### Team Number

2974

### Team Name, Corporate/University Sponsors

GE Volunteers/Novelis/ABB/Lockheed Martin/Randstad/Cobb EMC/Dixie Industrial Finishing/Women in Technology/United Technologies-Automated Logic&Walton High School

### Briefly describe the impact of the *FIRST* program on team participants within the last five years.

The FIRST program shapes our team members into passionate STEM leaders. Through FIRST, our students have developed products and ideas (STEM kits), presented to fortune 500 companies (this year, to UPS), competed globally (at Worlds, 5 times), and have grown with the culture of FIRST. FIRST also enabled team members to receive internships at prestigious companies and organizations including Lockheed, Novelis, TAG-Ed and GA FIRST. These experiences would not be possible without FIRST.

### Describe the impact of the *FIRST* program on your community within the last five years.

Over the past 5 years, we've spread the FIRST message at 250 outreach events and 33 STEM camps. Our GirlsFIRST program encouraged over 450 girls in GA to pursue STEM careers. We've held 30+ after-school STEM events at local elementary schools, and recently started a GirlsFIRST movie night. At NASA's invitation, we've shared our love of robotics with 1000+ people, over the last 4 years. Finally, we share our team's successes with our school and County, which encourages others to pursue STEM.

### Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.

Walton Robotics adapts methods of spreading FIRST's message to audiences we hope to impact, and we do so thoughtfully and intentionally. We selected Arduinos to engage kids in programming. We use high-impact events like football and soccer games to demonstrate our Recycle Bot and T-Shirt cannon. To reach younger audiences, we use our cartoon mascot Walt, who was featured in a Walt Storybook (translated into 5 languages), converted into "Flat Walt" handouts, and distributed as "Puzzle Walt."

### Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

Our team embodies the ideals of Gracious Professionalism and Coopertition. While we seek to be strong competitors, we are just as happy to see parts from our pit, show up on robots we are competing against. We helped start FTC team 17109, Dickerson Robotics, that we mentor on a weekly basis. We look for opportunities to share experience with other teams such as through our presentations at the GA FIRST Symposium, or our annual kickoff event, where we invite other GA teams to discuss strategy.

**Describe the team's initiatives to help start or form other FRC teams**

Walton Robotics is fortunate to be considered an experienced team. We've used our decade-long involvement in FIRST to start an FRC team in Georgia, 4749. In addition to helping start this team, we helped transition team 4910 from a school team to a community team. Finally, we inspired FTC team 1131 from China to transition to an FRC team. All of our initiatives, camps, and similar programs are aimed at encouraging students to get involved in FIRST, regardless of their age or experience level.

**Describe the team's initiatives to help start or form other FIRST teams (including Jr.FLL, FLL, & FTC)**

From outreach events to educator presentations, Walton Robotics advocates for the creation of FIRST teams at all levels. Our team started three FLL teams, including team 13933 at the Boys and Girls Club and team 30211 at the Dobbins Air Force Base, inspired by a camp we hosted at the base. We initiated and mentored FTC team 4631. This year, we started FTC team 17109. Our team utilizes outreach initiatives like ASPs and GirlsFIRST to encourage students to join the FIRST community.

**Describe the team's initiatives on assisting other FIRST teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the FIRST program**

Since 2015, our team ran a qualifier FLL tournament 3 times, hosting over 70 local FLL teams. We learn from this experience, and this year's tournament was praised as one of our best by parents, coaches, and kids. Also, alumni from our team mentored FTC team 11096 recently with their engineering and presentation. This year, we started and mentored FTC team 17109. Our biweekly mentoring helped them learn to collaborate successfully on their engineering, programming, and presentation efforts.

**Describe how your team works with other FIRST teams to serve as mentors to younger or less experienced FIRST teams (includes Jr.FLL, FLL, FTC, & FRC teams)**

Members of our team have mentored or coached several younger FIRST teams over the years. This year, more than 25% of our team actively mentor FTC team 17109 in both engineering and outreach methods. This FTC team is also learning cooperation as they partner with us in events messaging STEM in the community. Additionally, in the last five years, a team member formally mentored FTC team 4631 over multiple seasons and several team members taught robot training to rookie FLL teams in GA.

**Describe your Corporate/University Sponsors**

We seek sponsors that will engage in FIRST events and give back to our community. We partner with companies such as GE, Novelis, Lockheed Martin, and Cobb County's Board of Education. This year, team members presented to UPS's Logistics & Distribution division, and UPS is now considering an internship program for team members who study engineering in college. Also, NASA continues to invite our team to an annual event in FL, where we display our robot and spread the message of STEM and FIRST.

**Describe the strength of your partnership with your sponsors within the last five years.**

90% of our sponsors have supported us for at least 4 years. Our school board provides us with a build site; in return, we've held STEM workshops such as GirlsFIRST, Robot Relay for Life, and For the Kids for our community. We've made a worldwide impact with Novelis: traveling to India twice in the past 3 years, and spreading the values of FIRST and STEM to more than 5000 underserved students. In return, we provide Novelis with media presentations describing the program's community impact.

**Describe how your team would explain what FIRST is to someone who has never heard of it**

FIRST is an organization that inspires kids, ages 4-18, and helps them realize their potential through STEM-related activities. Through FIRST robotics competitions, kids are encouraged to apply teamwork skills to achieve set goals. When competing, teams practice "Cooperation," which means helping ALL teams perform to the best of their ability. Participants are expected to display values of "Gracious Professionalism," recognizing others for their hard efforts, regardless of a win or loss.

**Briefly describe other matters of interest to the FIRST judges, if any**

We are an established team, leading by example in our community. We created and share a free line of outreach products featuring our mascot, Walt, to help others become STEM leaders too. Walt's STEM Toolbox includes 3 Walt's FIRST STEM Kits, Walt's FIRST STEM Camp Gear, and a Storybook. Our proven STEM kit model continues to be successful; this past summer, two of our team members traveled to India and used Walt's STEM Toolbox to introduce over 1000 kids to the importance of STEM and FIRST.

**For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.**

Walton Robotics inspires students to pursue STEM careers and take part in today's technologically advanced world. We've reached millions through our television appearances, and we've developed proven STEM event models, educating thousands. In addition we've created empowering GirlsFIRST events, led educational ASP programs, built a collaborative DE program, and leveraged our sponsor relationships -- all while developing a world-competitive team that makes our school and community proud.

**Team Captain/Student Representative that has double-checked this submission.**

MANJU GANAPATHY

## Essay

This year, FIRST challenged its teams to "rise" -- to inspire our communities to work together, strengthening and protecting the forces that bind us, creating places where collaboration and collective wisdom elevate new ideas and foster growth. Celebrating Walton Robotics' 11th season as FRC team 2974, we used this year's game theme to illustrate what makes us rise, by focusing on the Forces that guide team 2974: Our Youth, Our Communities, Our Sponsors, and Our Girls.

### Our Youth

Franklin Delano Roosevelt once said, "We cannot always build the future for our youth, but we can build our youth for the future." Members of team 2974 embrace this ideal -- making sure that the next generation of young students is prepared for the challenges facing them. When developing programs, events, or activities, Walton Robotics emphasizes and measures their impact on children. Reaching kids at a young age encourages them to pursue STEM during crucial early years. In 2019, we conducted our 2nd year of after-school programs (ASPs) in local elementary schools - a program we designed to be impactful to kids traditionally underserved in STEM. This year, we doubled the number of participating schools, where we conducted over 10 different activities at each event. 5-8 team members conducted ASP programs on most Wednesdays during our fall semester. We presented to groups of 20 - 50 kids during each event, reaching over 300 students since we began. For this program, we utilized our unique STEM product line -- again, developed for kids. Walt's STEM Toolbox, featuring our cartoon mascot Walt, contains kits demonstrating aerospace, chemical, and civil engineering concepts. In addition to visiting kids at their schools, we also brought them to us! Last year, we created a brand new initiative called STEM Day Field Trip, where we invited elementary school students from low-income areas to our build site. There, kids participated in our educational STEM activities. Over 70 students engaged in tasks such as: an egg drop challenge; driving robots; flying drones; and programming EV3s. We not only focused on STEM topics and activities, but we also used those activities to spread FIRST values. We demonstrated and highlighted concepts such as cooperation and gracious professionalism, through our carefully designed team-building activities and friendly competitions. We also reach older kids in thoughtful ways -- we continue to attend all our high school's home football games with our T-Shirt cannon, highlighting robotics to unconventional audiences. Walton Robotics also seeks out opportunities to act as mentors and leaders for young FIRST teams. This year, we started an FTC team at a local middle school in our County -- team 17109, Dickerson Robotics. Twice a week, at least 3 Walton students attend the FTC team's meetings and provide insight into the technical and professional aspects of becoming a successful team. Our team takes its mentoring role seriously, and engages in discussions covering multiple topics with these younger kids, including electrical engineering, presentation skills, and public speaking. Over half of our team attended meetings with the young team, sharing critical knowledge and skills. Finally, Walton Robotics renewed its commitment to its local FIRST and FLL communities this year by hosting a well-received FLL event. Walton students ran the event and coordinated volunteer efforts for 24 participating teams. Multiple parents and coaches thanked our team and volunteers for the impact they had on the kids during judging and competition. In fact, The FLL Georgia State Head Referee remarked that he "was exceedingly impressed with the detail and gallantry each section was given. It was a well-run event, at minimum, and one that I felt really radiated the proper spirit and positivity we want to spread in all FIRST robotics communities." Through these events and activities, Walton Robotics demonstrates the importance of inspiring kids to be passionate about STEM.

### Our Communities

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Since the team's inception, members have logged over 7,000 outreach hours, promoting STEM and FIRST ideals to the multiple communities we impact. In fact, we successfully engage with communities on a local, national, and even international scale. Our team feels that it's important to contribute to worthy causes. In 2018, we conducted a fundraising event we called Robots for the Kids. The event, which involved racing robots for contributions to Children's Healthcare of Atlanta (CHOA), was dedicated to our mentor, Debbie Kauffman, who we recently lost to cancer. We continued the spirit of that event this year, by partnering with Georgia Tech for its "For the Kids" program at our high school, where we again raised funds for CHOA. We are also active in our State community. Our Destination Engineering (DE) program, now in its 7th year, continues to encourage GA teams to reach the Einstein stage at Worlds by providing a competition-worthy practice field for all teams to use. Over 45 FRC teams have participated in our DE events, including all the GA teams that qualified for Championships in the last 2 years. We've worked with GA FIRST to replicate DE, and there are now 4 DE sites in GA and 4 in other states. For the past 4 years, our team also hosted a kickoff event to introduce local FRC teams to the season's game and explore different aspects of gameplay in a collaborative fashion. Last year, 6 teams attended the event in person, and 6 participated via video chat, to discuss the best strategies to elevate Georgia teams. Finally, our communities extend beyond Georgia, and even span the globe. For the past 4 years, our team represented NASA at the Tom Joyner Family Reunion in Orlando, Florida. This event is the nation's largest African American family event, and allows us to interact with our robots with broad audiences. This year, we also donated 250 of our Walton STEM kits to the Neo Engineering League of America. The kits were given to 20+ teams from African countries at the Pan African Robotics Competition in their Chairman's Award package, expanding Walton Robotics' global reach. Over the past three years, students from team 2974 also traveled internationally to bring awareness to STEM and FIRST principles. Last summer, members of our Executive Team traveled to Virudhunagar, Tamilnadu, a rural community in India where students have little access to technology. More than 1000 kids attended the STEM workshops hosted by our students. Using our Walt's STEM Toolbox, we introduced STEM principles and encouraged STEM careers. This trip represented the 4th opportunity for team members to present to kids outside of the US.

### Our Sponsors

We are very fortunate to work with sponsors that both engage in FIRST events, but also give back to our community. We partner with companies such as GE, Novelis, Lockheed Martin, Cobb County's Board of Education and UPS. Last year, Novelis invited us, along with two other FIRST teams, to a Global Leadership Dinner to inspire their employees to get involved in FIRST. At the event, we put together over 150 of Walt's FIRST STEM Kits, that were later distributed by our team. This year, members of our Executive Team presented to UPS's Supply Chain Logistics & Distribution division, and UPS is now considering an internship program for team members who study engineering in college. Novelis invited our team to participate in their tailgate for an Atlanta Falcons game, as a part of their Recycle for Good initiative, where we used our Recycle bot to collect cans from Falcons fans.

### Our Girls

Though team 2974 encourages ALL students to pursue futures in STEM, Walton Robotics is committed to overcoming stereotypes and cultural norms which dampen girls' interest in STEM. Through our initiatives, we seek to change attitudes about STEM. Since 2014, Walton continues to coordinate and execute a unique initiative called GirlsFIRST, and recently expanded the program to include GirlsFIRST Jr. These free annual workshops teach career skills through collaboration with successful female professionals. In addition, attendees participate in engineering and coding activities. To date, we've hosted 10 events for more than 500 girls. In one pre-event survey, we asked participants, "Do you see yourself pursuing STEM as a career?"; 55% of them chose "not at all." By the end of the event, 100% chose "Yes, absolutely!" In 2018, Walton Robotics created another event for girls, called GirlsFIRST Movie Night. Middle and high school girls are encouraged to come to our build site for a fun night of STEM activities, followed by a STEM-related movie, with an emphasis on female empowerment. In our second year of holding this event, we introduced girls to STEM and FIRST principles in a creative environment. We intend to continue this event in future years. Finally, in the past year, we looked at ourselves as a team to determine whether we were setting a positive, girl-empowered environment. Because we had room to improve, we focused on recruitment for the next generation of Walton Robotics. This effort resulted in increasing the number of girls on our team by over 50%, making the percentage of girls on our team rise from 16% to 35%. Our engineering team is now made up of 8 girls, creating a 1 to 3 ratio of females to males. Girls are a force for change on Walton Robotics.

### Conclusion

In many ways, this past year represented an opportunity for team 2974 to enhance our core programs, with an intentional focus on OUR Forces for Change: Our Youth, Our Communities, Our Sponsors, and Our Girls. We continue to reach broad audiences -- including kids, FIRST teams, educators, and underserved communities. We demonstrate a commitment to empowerment, sustainability, and advancing the concepts of STEM and FIRST, not just for us, but for the ones that come behind us. In that way, Walton Robotics "rises" to meet the challenges of building the future, together with FIRST.