

## Chairman's Award - Team 2974

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2018 - Team 2974

### Team Number

2974

### Team Name, Corporate/University Sponsors

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

### Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

FIRST has shaped our team members into successful leaders, passionate about STEM and committed to gracious professionalism and cooperation. All of our alumni pursue STEM fields and have earned multiple FIRST scholarships. Members have also earned awards including 2 Dean's List State Finalists. Team members have completed internship opportunities at companies and organizations such as Lockheed, Novelis, Cbeyond, TAG Ed, and even GA FIRST because of their involvement in the FIRST program.

### Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

We have spread FIRST's impact to 250+ outreach events and 29 STEM camps. This year we ran 5 weeklong Lego NXT camps at Fort Stewart, Boys and Girls Club, and Garden City. Our GirlsFIRST program has encouraged 400+ girls in GA to pursue STEM. We have promoted FIRST at statewide teacher conferences and trainings such as GSTA and STEM Forum. We have hosted events focused on coding annually for the past 5 years. For 3 years, we have impacted more than 1000 kids at TJFR, a national NASA event.

### Team's innovative or creative method to spread the *FIRST* message

Our T-Shirt cannon, which 5 million people have seen on NFL's Together We Make Football, inspires unconventional audiences at football games. Our recycle bot encourages recycling by collecting aluminum cans at football and soccer games. We started an outreach program incorporating drones where kids program their drones to perform a task. Our Storybook inspires children to pursue STEM through fun stories and experiments. Flat Walt has spread FIRST's message to all 7 continents and space 4 times.

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

In collaboration with GAFIRST, we initiated DE to build and provide a field for FRC teams to practice on. DE has helped over 45 teams and has been replicated in 8 locations across the country. In 2017, DE accomplished its goal of helping a GA team play on the Einstein field. Our team also provides workshops, scrimmages, tools, and programming help for other teams in the area and has won the GP Award recognizing the support we give to other teams during competition.

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

In GA, we started FRC teams 4910, 4749 and 5594. When a member moved to FL, he started another FRC team, 6184. In China, we inspired team 1131, an FTC team, to grow to FRC. Due to our week-long STEM camp at Dobbins Air Force base this year, Dobbins has created FRC team 6842. Our greatest strength is helping new teams grow and improve through presentations at Robojackets seminars, trainings through the DE program, and hosting kickoff for multiple teams in our area.

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

We initiated and mentored FTC teams 4631 and 5338, supported 5338 through its transition to a community team, and started FLL teams such as two at Boys and Girls Clubs (32727 and 18529). This summer we'll help start 2 FLL teams in Brazil. At presentations for educators and outreach events, we advocate for the creation of new teams by providing information about all levels of FIRST. One of our camps this year has even led to the creation of FLL Team 30211 at Dobbins Air Force Base.

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

We train over 200 students each year in robotics camps at school, Boys & Girls Clubs, and GA Tech. DE fosters workshops and scrimmages. We make our award-winning business plan available online to help guide teams and direct their efforts. In China, we gave a presentation on how to win Chairman's; the next season, team 5515 won their first Chairman's award at a regional. This year we hosted a kick-off along with brainstorming and strategy session which 160+ FRC team members attended.

**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)**

We taught a Brazilian FRC team how to run STEM camps and ran a full day FLL robots training for 3 rookie teams in GA. We mentored the G.I. Joz in their rookie year, an FRC team made up of students in the foster care system. To show their gratitude, they invited us to join them at the White House Science Fair. We partnered with FRC and FTC teams to start and mentor an FLL team at a Boys & Girls Club for 2 years. They won the Teamwork Award at State Championships their rookie year.

**Describe your Corporate/University Sponsors**

Our 18 corporate sponsors include businesses and companies in technology and service fields. 90% of our sponsors, including GE, Novelis, Lockheed Martin and Cobb EMC, have supported us for at least 4 years. Our sponsors provide 11 engineering and non-technical mentors, \$56,000 in financial support, and in-kind donations including FRC game-field materials. In return for their support, we have given STEM and FIRST presentations at the Novelis headquarters in Atlanta and at their plant in New York.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years**

We participate in GE's March of Dimes events. We support STEM through Cobb EMC LEGO Events. We energize Suntrust's United Way Campaign. We've created a worldwide impact with Novelis distributing 400 STEM kits to 18 countries; ran a free STEM camp in Pinda, Brazil for 40 children; and organized International Women's Day initiatives. We make videos, newsletters, and presentations for our sponsors about their impacts on FIRST; in return, they provide us with resources.

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

FIRST is an international organization which utilizes robots to teach personal and professional skills that will help students thrive in STEM. Students learn technical, critical thinking and problem solving skills by creating and competing with robots. Important soft skills are cultivated including team building, strategizing, communications, and project management. Most importantly, students have the opportunity to work alongside professionals building lasting relationships.

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

We are an established leader promoting FIRST and STEM. We created and share a free line of outreach products to help others become STEM leaders in their communities. Walt's STEM Toolbox includes 3 Walt's FIRST STEM Kits, Walt's FIRST STEM Camp Gear, and a Storybook. The kits provide supplies to run STEM activities for 50 people. The Camp Gear provides administrative material, instructions and videos for a weeklong camp. Storybook engages a younger audience and is translated in 5 languages.

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

Harsimran Minhas

## Essay

"In life, there are drivers and passengers. Which do you want to be?", Mr. Benton, our coach, always asks. Members of Team 2974 choose to be drivers by taking the initiative to be leaders and role models in FIRST. Walton Robotics has spent over 7000 hours promoting STEM and FIRST, providing support to other FIRST teams and directly influencing the STEM education system.

Team 2974 is Driven to be FIRST by Empowering, Sustaining and Advancing the STEM community.

### Driven to Empower

We encourage students to imagine and pursue a future in STEM. Through our initiatives, we have exponentially expanded our impact and changed attitudes around the world from "I can't" to "I can."

In 2014, Walton pioneered a new initiative called GirlsFIRST and expanded it to GirlsFIRST Jr. These free annual workshops teach career skills, such as networking, through collaboration with successful female professionals. In the past 3 years, we've hosted 8 events for more than 400 girls. It works. In one pre-event survey, we asked participants to answer the question "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!"

For middle-schoolers, Team 2974 annually runs 4 types of camps: EV3, VEX, Java, and Drones. This past summer, we hosted 8 camps, including the Pete Nance Boys and Girls Club and STEM Compass at GA Tech. We collaborated with ChickTech, a nonprofit organization, to coach elementary-school girls on STEM concepts through building and programming LEGO robots. We introduce metro Atlanta kids to STEM, so they acquire essential skills in collaboration, communication and teamwork. Our camps have encouraged more than 300 students to pursue STEM courses in high school and eventually STEM careers.

We spread STEM to children of active military personnel through a new initiative in the Military Family Readiness Program. We hosted 2 week-long STEM camps in Garden City and Fort Stewart. At the Dobbins Air Force Base, we coordinated and ran a 2-week STEM camp incorporating FLL activities and drones. We explained the principles of programming to 1st - 6th graders and created exciting missions for them to complete. All proceeds went to support STEM Programs within the GA bases.

Members travel nationwide to talk about the positive influence of STEM and FIRST. For the past 3 years, our team has represented NASA at the Tom Joyner Family Reunion, a national conference in Florida for the African American community. For International Women's Day, team members traveled to Oswego, NY where they presented to Novelis employees and held a workshop for girls in the community.

We inspire people regionally and internationally, showing them that STEM is a pathway to a brighter future. In 2016, a team member went to India where he gave 18 presentations to grades 6-12 in 3 schools about STEM and FIRST teams. A total 5400 students were introduced to FIRST and inspired to start FLL teams.

In 2015, we were invited by Novelis to run a week-long STEM camp in Pinda, Brazil for 37 students aged 9-10 in an underserved area. We taught the Brazilian team, 1382, how to organize STEM camps. They translated our activities into Portuguese and will continue to run similar camps independently. This summer, we have been asked by Novelis to return to Pinda to run 2 week-long STEM camps. In addition to working with the kids, we will teach the employees and families at the Novelis plant the basics of EV3 operation and help them start and maintain FLL teams.

We represented FIRST and spread the message of STEM through TV appearances on ABC, CBS, ESPN, and Rede Globo, the 2nd largest commercial network in the world. In just 5 years, we have reached an audience of over 200 million people.

Team 2974 inspires businesses to support STEM initiatives. We represent our sponsors at outreach events and deliver company presentations. This year, students presented on the importance of FIRST and STEM at the Novelis, GE, WIT, and Randstad headquarters multiple times.

### Driven to Sustain

Team 2974 is driven to sustain the culture of FIRST within our team, within teams we have started and mentored, and through partnerships with fellow FRC teams.

Our sustainable team structure has been emulated by FIRST teams worldwide. Our leadership team of student directors and assistants in 6 departments work together to create and execute annual plans. Walton Robotics Foundation, a separate non-profit entity, was formed to handle the financial aspects of our team, ensuring that we have adequate funds to fulfill our mission.

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To help grow FIRST, our students guide FLL, FTC, and FRC teams with impressive results. In GA we have directly started and mentored 8 FLL teams, FTC teams 4631, 5338, 10843, and FRC teams 4749, 4910, and 6842. Working with our FRC and FTC partners, we started a Boys & Girls Club FLL team that won the Teamwork Award at State. We have mentored several FTC teams and helped one transition from a school to a community team by providing facilities, mentors, and financial support. We also host an FLL tournament annually.

We continue to work closely with the teams we've mentored, including GI Joz, a third year team of students in the foster care system, who gained national attention at the White House Science Fair. At the Dalton District, we chose 2 teams we mentored, GI Joz and 4910, as our alliance partners; we won the competition!

Our students have also inspired the creation and promotion of teams outside our local community. A team member moved to Florida and started FRC team 6184. After attending our presentations in China about Chairman's, team 5515 won their first Chairman's Award at the Shenzhen Regional.

To increase competitiveness and help a GA team reach the Einstein field at Championships, we collaborated with GAFIRST to pioneer a program called DE. As part of this initiative, we share our full-sized FRC field, mentors, and tools. Since its inception, DE has grown from a platform for team practice into a culture that promotes networking, coopertition and lasting relationships among teams.

Over 45 FRC teams have participated in DE events, including all the GA teams that qualified for Championships in the last 2 years. We have worked with GAFIRST to replicate the DE program; there are now 4 DE sites in GA and 4 in other states. The Technology Association of GA dubbed DE a "game-changing initiative".

In order to share our successful techniques with other teams, we host presentations and seminars. At the GT Robojackets TE Sessions, we have given seminars about Entrepreneurship, Chairman's, our business plan, and safety over the last 2 years. At the World Championships in 2016, we presented to FIRST teams about our innovative product line, Walt's STEM Toolbox.

We are driving FIRST's missions and making STEM accessible to students everywhere in the world.

Driven to Advance

Walton Robotics has advanced education directly through various products, presentations, and workshops.

We have created multiple products that are leveraged by teachers to augment their lesson plans. Our product line, Walt's STEM Toolbox, contains 5 STEM kits. Each kit is fully tested and provides background material, explanation of the Engineering Design Process, full color directions, and easily resourced inexpensive materials. Walt's FIRST STEM Kits: Earhart, Curie and Davinci, provide materials for 30-50 kids to complete projects focused on various STEM concepts. With the help of Novelis, we've shipped over 400 kits free of charge to 18 countries.

Walt's FIRST STEM Camp Gear is a comprehensive do-it-yourself camp kit that provides a manual with 18 activities, videos, and information from budgeting to mentor tips.

Available in 5 languages, The Adventures of Walt is a children's book created to appeal to elementary school kids and enable teachers to connect STEM and literature. The book revolves around our mascot, Walt, and follows him as he explores different engineering concepts. It includes 5 short stories, labs and activities. At every event, we hand out our Flat Walt paper cut-out, encourage people to take pictures with him and send the photos for us to share. So far, he's been to all 7 continents and space 4 times!

In order to reach teachers directly, we host presentations and training workshops. Locally, we've presented at STEM Forum, GSTA, and Cobb teacher workshops. At these events, we also hand out outreach kits. In our school, we've influenced the way STEM curriculum is taught. In several STEM classes, students are assigned to build robots and test them as school projects. Dr. Mallanda, the STEM Director at our high school, said, "Walton Robotics has helped spread awareness of STEM to younger kids which has increased participation in the STEM Academy and in Engineering courses overall."

To change the culture at our school, we partner with our school's athletic department to promote STEM in sports. Our football team used our drone footage of their practices and games to analyze their performance. Our T-shirt Cannon races around the perimeter of every home football game and pep rally to energize fans. We engage sports fans while teaching them that STEM is pertinent to all fields.

We also promote STEM at professional sporting events. At an Atlanta Hawks game, sports fans and athletes engaged with our T-shirt Cannon. We recently created 2 other outreach bots: SoccerBot and RecycleBot. SoccerBot focuses on reaching fans at sporting events of the Arthur Blank Foundation. RecycleBot was requested by Novelis to enhance their "Recycle for Good" initiative which supports Habitat for Humanity.

Conclusion

Our success reaching widespread audiences, including girls, FIRST teams, educators and underserved communities, demonstrates our commitment to empower, sustain, and advance the concepts of STEM and FIRST. We are Walton Robotics, and we're driven to build the future and amplify the impact of FIRST.