

# Roaring Riptide

## *Inspiring the Minds of Tomorrow*

WRITTEN BY DEVOUN CETOUTE

**T**HE ROARING RIPTIDE: FRC TEAM 4118 AT THE P.K. YONGE DEVELOPMENTAL RESEARCH SCHOOL STRIVES TO BRING EXCITEMENT and awareness in science, technology, engineering and math (STEM). The robotics team is made up of about 30 students ranging from middle to high school, their coach, Leigh Anne Brewster, and adult mentors, most of which come from the University of Florida's Building Others Through STEM club (BOTS).

The team is part of the For Inspiration and Recognition of Science program (FIRST), a non-profit organization that helps young people find a passion for STEM by offering four different levels of after school programs. They are First Lego League Jr. (for kindergarten to fourth grade), First Lego League (for fourth to eighth grade), First Tech League (for seventh to twelfth grade) and First Robotics Competition (for ninth to twelfth grade).

"Roaring Riptide: FRC Team 4118, strives to make robotics about #morethanrobots!" Leigh Anne Brewster said in a recent email. "We seek to inspire young people to be leaders by engaging them in exciting hands-on programs that build STEM expertise and encourage innovation."

A big part of what the team does is their six-week commitment, to the FIRST Robotics Competition, an international high school robotics competition consisting of 50-60 teams. Each year, teams of high school students, coaches and mentors work to build a game-playing robot in six-weeks, from January to February. The competition takes place in March and April. Roaring Riptide calls this time the "on-season." They have participated since their founding in 2011.

Dangela, Roaring  
Riptide's 2018  
First Robotics  
Competition robot,  
poses for some  
studio photography.





Some of the Roaring Riptide team members posing with their Imagery awards, Pal Scout modified toy and lifeguard decorations.

Roaring Riptide's work station at P.K. Yonge Developmental Research School is fully decorated in their lifeguard theme. It is a close replica to how they decorated their workshop at the 2018 First Robotics Competition, which was one of the factors of them winning the Imagery Award.

## One way Roaring Riptide aids the community is their work on modifying toys to be more accessible to children with disabilities.

This year the competition's theme was FIRST Power Up. Students were tasked to build a robot that could pick up "Power Cubes" and place them on scales that were 2 ft. and 8 ft. off the ground, according to the FIRST Power Up game and season manual.

Roaring Riptide worked from 3 p.m. to 5 p.m., and sometimes even 6:30 p.m., during the six-weeks to create Dangelia, their robot for competition. The robot's name was based on the name of their robot from last year's competition, Dan.

The team participated in the South Florida and Orlando Regional competitions and made it as far as the qualification tournament. However, they did win the Imagery Award at both competitions for the first time and were a finalist for the Woodie Flowers Award in South Florida. The Imagery award is given to the team who has outstanding visual aesthetic integration of machine and team appearance.

The team believes they won the award because

of how much effort they put into their theme. The team members wear lifeguard outfits: consisting of their team shirt, bright red pants and a red sun visor. In their workshop area at the competition, they created makeshift lifeguard towers that had authentic beach advisory pamphlets, small beach balls and pins.

Roaring Riptide's work in the STEM field doesn't start and end with the on-season. In the off-season – summer, fall and end of spring – the team participates in numerous community activities. What they do ranges from modifying items to help those in need to educating the community on STEM.

"When I joined in the summer I thought I would be working on robots, but I learned the team was based on outreach," 10th grader and Roaring Riptide member Jackson Fugate said. "One of the first things I worked on was the Scout Bear, and it really changed my perception of what the team was about."

One way Roaring Riptide aids the community is

their work on modifying toys to be more accessible to children with disabilities.

In May 2017, the UF BOTS club hosted the Assistive Technology Workshop at P.K. Yonge. The workshop taught the team how to adapt the My Pal Scout toy from LeapFrog to be more accessible to children with limited motor controls. The toy has a button in each of its paws, four in total, that makes noise when you squeeze it. For children who cannot squeeze the paws they rewired the toy so that when you push a big red button it will do the same action.

The students didn't stop there. With the help of UF BOTS and donors, the students figured out how to rewire the Fisher-Price power wheels jeep wrangler riding toy. For children who cannot push the pedal to make the toy move, they attached a big red button on the steering wheel and wired it so that when you push it the car moves forward. Not only can the jeep be an accessible toy, but also an alternative for children who need expensive wheelchairs.

After creating these accessible toys, the students at Roaring Riptide didn't just keep the knowledge to themselves and store the toys in their workshop. They brought the toys and Dan the robot to the Maker Faires in Orlando and Gainesville. At the Faires they showed off their creations to families and shared tips with them on creating accessible toys of their own.

They participated in the Christmas Toy-Adapt-A-Thon, where they and other organizations created over 100 modified toys. They even made sure to keep the original packaging safe, so that when children opened their toys they wouldn't know the difference between the original and modified versions. During their on-season, they took part in the Assistive Technology Industry Association's Maker Day. Roaring Riptide showed people all around the world how to adapt toys to make them more accessible.

The team is currently working on expanding the reach of their good works and aiding of the community.

One of their team members, eleventh grader Faizan Haider, is part of the Kennedy-Lugar Youth Exchange and Study program. The program provides scholarships for secondary school students from countries with significant Muslim populations to spend one academic year in the United States, according to [yesprograms.org](http://yesprograms.org). Haider said that the opportunities in STEM that he has been offered here in the U.S. are almost non-existent in his home country of Pakistan. He wants to help bring opportunities like Roaring Riptide back to his home country.

It seems the Roaring Riptide will continue impacting the community both near and far for years to come. **OT** To learn more about Roaring Riptide and their accomplishments in STEM and the community, visit: [roaringriptide.com](http://roaringriptide.com).



Roaring Riptide members work on adapting the LeapFrog MyPal Scout to be more accessible at a workshop in June 2017.

Members of Roaring Riptide work on adapting the Fisher-Price power wheels Jeep Wrangler (below) to be more accessible to children with disabilities. UF's BOTS and Women in Electrical and Computer Engineering (WECE) also assist.

